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CIVIL AVIATION

SUCCESSFUL IL-76TD FLIGHT TO ANTARCTIC

Moscow IZVESTIYA in Russian 5 Mar 86 p 12

[Article by special IZVESTIYA correspondent V. Belikov: "The Expedition Has Been Completed, Flights Continue"; first paragraph is IZVESTIYA introduction]

[Text] It is in no way a simple matter even for a modern jet airliner to fly to the Antarctic with cargo and more than a hundred passengers and return. The air expedition on the Il-76TD, having expended approximately 45 hours of flight time on the entire route of 35,000 kilometers, was completed at Leningrad Pulkovo Airport on 4 March. Several tens of persons who had completed their hard work on the ice continent returned to the Motherland with the return trip.

"The hopes resting on the Il-76TD were completely justified!" says Hero of Socialist Labor N. Kornilov, who headed the air expedition. "This long-range transport vehicle gave an excellent account of itself during overflight of all climatic zones--from circumpolar latitudes to the equator. The Aeroflot crews and personnel of Molodezhnaya and Novolazarevskaya stations, who prepared the artificial airfields, marked themselves as highly skilled specialists. Entirely through their efforts, reliable communication using heavy aircraft between our country and the Antarctic and also cargo trips of Ilyushin aircraft above the Antarctic mainland for supplying the stations with everything necessary by dropping cargo on parachutes has been organized.

The following typical situation, for example, demonstrates the extent to which supply of Vostok Station near the Pole of Inaccessibility, for example, is simplified and speeded up. A tractor-sled train of many caterpillar-type tractors, dispatched on a 1,500 kilometer trip from Mirnyy Station with 800 tons of fuel, can deliver only a little more than half of this fuel at its destination--the remaining fuel is expended there in return by the tracked all-terrain vehicles themselves. Two Il-76TD aircraft can carry the same weight of cargo to Vostok Station within 2-3 days instead of several hard weeks, covered by a tractor-sled caravan.

The appearance of the Il-76TD in the Antarctic of course does not replace delivery of everything necessary there by the tried traditional method--on ocean-going ships. However, the effectiveness of work to study the remote, difficultly accessible mainland, will undoubtedly be increased considerably due to the aid of the large aircraft.

The manager of the flight part of the expedition, the chief navigator of the Ministry of Civil Aviation V. Kiselev, speaks:

"The materials of the first technical voyage of the Il-76TD on the Antarctic run must now be studied carefully. This is necessary so that other Aeroflot crews, formed from first-class specialists and having the required flight experience on international runs, could transport on these aircraft the next shift of those who winter over at the end of October or beginning of November."

By this deadline, the organizations of the Ministry of Civil Aviation, its GosNII [State Scientific Research Institute] and OKB imeni S. Ilyushin [Special Design Office imeni S. Ilyushin] could preequip the aircraft. Its comfort must primarily be improved and the noise level from the engines in the cabin must be reduced.

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CIVIL AVIATION

INSTITUTE'S LOW INVENTION, PATENT OUTPUT INVESTIGATED

Moscow VOZDUSHNYY TRANSPORT In Russian 11 Feb 86 p 3

[Article by special VOZDUSHNYY TRANSPORT correspondent V. Tseyukov: "Draw a Line Through the 'Invention' Column"]

[Text] A line has been drawn through the "invention" column. There is not a single author or a single submitted idea. This is how it was at the end of the 1960's, throughout the 1970's and this is how it was at the beginning of the 1980's. And only several years later did modest numbers appear on the pages of ministry reports that indicate that scientists of the Central Scientific Research Institute of Automated Civil Aviation Management Systems had discovered new facets in their interesting and generally hard affairs.

Yes, the first application for an invention was submitted only in 1984--20 years after this institute was founded! The first "swallow" had arrived. the State Committee for Inventions and Innovation recently approved the proposed innovation. We recall only that a single swallow does not make spring.

I knew nothing about this until my trip to Riga. But I myself got the idea of being attached to the institute when I studied documents and reports concerning patent work at the scientific research organizations of the sector in the department of new mechanization devices, invention and innovation of our ministry. I studied them and was amazed.

For example, 85 applications were submitted by GosNII GA [State Scientific Research Institute of Civil Aviation], 60 were submitted by Aeroprojekt [Central Office for the Surveying and Planning of Airlines and Airports] and only 7 patent applications were submitted by TsNII ASU GA [Central Scientific Research Institute of Automated Civil Aviation Management System]. There were 33 applications from the head institute of the sector during the first 6 months of 1985, while the Riga inventors had a line drawn through the reports column. Again there was not a single submitted idea, not a single attempt to patent an invention. That is why I wanted to penetrate the "secret": are these lines drawn through the reports due to weak organization or creative passivity? Perhaps, there is nothing to invent and perhaps there is no one to invent--they are overloaded with planned tasks?

Acquaintance with the institute began with the departments. Each of them has created its own automated system and some do not have even one system. How

many of them there are here, and what variety! The ASU [automated management system] Transport and Scheduling, Centering and Safety and many others as well, developed at this institution, should facilitate the labor of sector workers, should increase its efficiency and should bring in many percentages of profit. The tasks faced by the collective are striking: to increase introduction of automated systems threefold during the 12th Five-Year Plan. There is yet another task: to create a design section at the institute. In short, there were enough concerns.

Being interested in the "global" problems of the institute, I had not yet asked myself the main question--on the set-up of inventor affairs here. I had long wanted to begin to determine the reasons for the weak work in this area.

I called attention to the fact that in the institute's hallway, as in any other establishment, they have bulletin board with the collective's socialist obligations. One of the points says: "Submit 45 recommendations in 1985." There was nothing said about inventions.

The innovators of the institute are vigorous and persistent fellows and as it is accepted to say now, communicable fellows and I liked them. They had a ready tongue, spoke simply and clearly and willingly shared their problems. One of the best innovators of the institute is Vladimir Pechennikov.

"I am ready to answer any of your questions," the young scientist smiled. "We are talking about innovator work, is that not true?"

We talked for a long time--about those ideas which had already found application and about what must still be done.

"But have you not tried to invent?" I expressed with interest. It is impossible to say that this question disconcerted Vladimir, but it was discernible that his eyes became immediately blank.

"No. I have not even tried it. Inventing is after all a more lofty matter."

"You have really not wanted to climb higher? You have not wanted to test your strength?"

Vladimir thought for a little while. He became silent. He then turned to the engineer for innovator work N. Baste. He literally tried to find an answer to the question torturing him in the eyes of his old comrade and perhaps he was simply waiting for assistance and support. And it came.

"Invention at the institute is still problematical," Nikolay Nikolayevich broke into the conversation. "As you know, we are developing systems for different needs of the sector. And what is the main thing in a system? The program. So that the program product, according to the existing situation, cannot be regarded as invention. No matter how you twist it--nothing will come of it. True, I heard that somewhere abroad they have begun to patent programs but we, as you can see..."

Actually, it is stated in the "Instructions for Filling Out, Submitting, and Considering Innovator Proposal Applications" that ~~the following~~ the following innovator proposals cannot be accepted (without mentioning invention): "mathematical solution of a problem, specifically, an algorithm or program for a computer, if it does not lead to a change of design features."

So then is my interviewee correct? Yes, but only half correct if one does not count the second part of the item.

But let us look further: the interpretations of Goskomizbobreteniy [State Committee for Inventions], dated 13 November 1975 "On According 'Invention' Status to Computer Technology Objects with Mathematical Computer Support." It states that the following can be recognized as inventions: "A device characterized by design features, the presence of which is determined by the features of the algorithm, which determines the organization and distribution of computer resources," and also "Methods characterized by execution in a specific sequence of a number of actions on material carriers using material objects." This means that there is still something for the masters of an engineering idea to work on! Indeed, the workers of the institute themselves confirmed this opinion. The deputy chief of TsNII ASU GA M. Bogomolov, senior scientific associate Ya. Gelfandbeyn and junior scientific associate S. Stepanov were able to find a solution to an important engineering problem while performing scientific research work, to submit an application for it for the proposed invention and to receive a positive answer! And what about the applications submitted last year?

"Yes, one can say," continues Vladimir Pechennikov, "there are ideas. But can we deal with only our ideas? I know nothing about elementary matters: how to compare my work with that which has been thought of before I came, how to fill out an application and to where to send it. Unfortunately, they do not teach us this at the institute."

They also did not teach this to other creators of automated systems. They do not teach this even here at the scientific research institute. True, the administration made attempts to change the situation: they invited patent authorities from the patent services center and even organized lectures through their own efforts. But all this is periodic in nature and did not become a system.

And neither innovator Yu. Galkin, nor his colleague Yu. Melnikov, nor the chairman of the council of VOIR [All-Union Society of Inventors and Innovators] nor many others, as before, know how to apply their efforts in an area new to them. And as before, they are afraid of the unknown and vagueness.

"There is no patent fund at the institute," S. Vasilyev shared his concerns, "and how can one conduct a patent search without it? We also lack a bulletin on patent and discoveries in our area."

Who then should and can assist the potential inventor to submit an application and to conduct a patent search? Primarily the patent department or office or as a last resort the patent sector should do this. There is neither one nor the

other at the institute. And the reasonable question arises: why is not the proper significance given to patent-licensing and invention work? Do the chiefs of the departments, who have concentrated all their attention on design of automated systems, not really understand that determination of engineering solutions during planned developments at the invention level is an indicator of the depth and quality of scientific search?

Of course, the advantages of inventor activity lie not only in this. But what else is there? To answer this question, let us look for several minutes at another civil aviation institute--the head institute, at the same one which brings joy with the number of inventors and the number of inventions.

"The use of inventions at GosNII GA, including those in the field of computer hardware," relates the chief of the patent search sector A. Yelkin, "helps to raise to a high technical level the quality of scientific developments, to improve the laboratory base of the institute and makes it possible to conserve fuel and tens of thousands of rubles of public monies. And how much working time do we 'conserve.' Here is an example for you. Our colleagues previously processed flight information on the computer. The greater part of it is now passed through a digital automaton, which A. Zorich, S. Zlatorunskiy, V. Konovalov and Ye. Metelkin thought up. As a result, we have relieved the computer and have begun to perform planning work much more rapidly. Another device based on electronics has also given a good account of itself."

"We saved more than 140,000 rubles from the use of these two innovations."

The following question arises: why do all the large institutes of the sector have patent specialists (for example, as we have already seen, there is an entire subdivision at GosNII GA, a patent group has been created at Aeroprojekt and this service also exists at the Krasnodar Branch of the head institute), except TsNII ASU GA? Are they needed at Riga? Yes I think so!

"Such a subdivision is not envisioned in our staff schedule." The deputy chief of the institute V. Dachkovskiy answered my question. "To free specialists from other departments for this work is an expensive amusement. It is clear what we lose--scientists stop performing their direct work. And what we will invent if we create an office or subdivision is still unknown."

As we can see, the management of the institute even now raises incomprehensible caution, making available to inventors the following: you want to invent--then invent, a patent search is needed--please conduct one on your own time at your own risk.

Time itself suggests that it is time to change this position. Even more so since there are some hopeful signs: there were seven submitted applications for proposed inventions in 1984 and there were several applications for the second 6 months of 1985. It is good that a survey course on the best postulation of invention and innovator work is planned at the institute; it is true that the following condition has been introduced in the new proposition about a socialist competition: "Departments which have not fulfilled the plan for innovation and invention will not be awarded prize positions."

However, these are only the first steps. And as is said, there is still no end of work ahead to achieve in it stable and visible advances through the efforts of the institute collective. There should be a return of investment and a large one at that.

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CIVIL AVIATION

CHIEF ON AUTOMATED ATC RESEARCH, IMPLEMENTATION

Moscow VOZDUSHNYY TRANSPORT in Russian 22 Feb 86 p 2

[Article by Doctor of Technical Sciences, Professor Tatyana Grigoryevna Anodina, chief of Research and Development Center for Automation of Air Traffic Control: "Approach the New With Qualitatively New Indicators"]

[Text] The chief of the Research and Development Center for Automation of Air Traffic Control, winner of the State Prize, Doctor of Technical Sciences, Professor Tatyana Grigoryevna Anodina, having graduated from the Lvov Polytechnical Institute in 1961, came to civil aviation as an engineer at GosNII GA [State Scientific Research Institute of Civil Aviation]. She was entrusted with heading a department after some time. From 1967 through 1984, T. Anodina has been working at the Ministry of Civil Aviation as manager of a department, deputy chief of the scientific and technical administration and chief of GlavUREO [not further identified].

Tatyana Grigoryevna has been a member of the CPSU since 1965. Her work has been rewarded with orders of the October Revolution, Red Banner of Labor and medals.

She was elected a delegate to the 27 CPSU Congress at the Moscow Municipal Party Conference.

The slogan of civil aviation at all times is safety, regularity and economy of flights. And an exclusive role belongs to the air traffic control service in each section of this triad. That is why the draft of the Basic directions for economic and social development posed a very crucial task to the sector for further improvement of the Unified Air Traffic Control System, for acceleration of introduction of automated air traffic control systems (AS UVD). The latter is extremely important, since it contributes to solution of many complex problems, related to flight safety, flight regularity and to a number of social problems that concern the number of workers of the air traffic control service and their working conditions.

For example, the AS UVD Start has been in operation for 10 years at Leningrad Pulkovo Airport. So that, there has not been a single precondition for hazardous approach of aircraft in the air space of the airport over a period of 10 years. Because of the Start system, the capacity of the air space of

the airport has been increased by 30 percent and the load of air traffic controllers has been reduced by 20 percent. With regard to fuel conservation, it has reached 20,000 tons during these years.

The Start system is now operated at a number of cities, including Volgograd, Rostov-na-Donu, Sochi and Krasnodar.

But the Start system is not the only automated air traffic control system. The Terkas system has been developed and introduced in the Moscow air region and the Trassa system has been introduced in the Simferopol region. The Strela system, which encompasses the entire region of the Northern Caucasus, is undergoing trials. It is planned to introduce it during the current five-year plan in the combined air region of the Kiev center, including such large regions as the Kiev, Lvov and Kharkov regions, and also to conduct investigations to install the systems in the country's other most important regions.

The collective of the center completed a large volume of research and development work during the 11th Five-Year Plan, directed toward introduction of the advances of scientific and technical progress to the practice of civil aviation. More than 50 new models of hardware and 30 production processes were developed and put into operation. It was possible to raise the level of air traffic safety an average of 1.4-fold, to increase the capacity of airports by 25-30 percent and to conserve more than 250,000 tons of aviation fuel during the five-year plan due to introduction of new ground and onboard flight support aids and systems alone and also the necessary organizational-technical and technological measures. We, jointly with our operating enterprises, were able during these years to increase the reliability of ground and onboard equipment 1.6- and 1.4-fold, respectively.

The center was awarded the challenge Red Banner of the CPSU Central Committee, of the USSR Council of Ministers, of the AUCCTU and of the Komsomol Central Committee for resolving the most important scientific and technical programs, for 1985 results and for the 11th Five-Year Plan.

Although we understand that we can and should work even more effectively and better. This is also true of unutilized reserves in intensification of scientific research, while I am sure there are many of these reserves. This is also true of an increase of responsibility, discipline and quality of scientific research work.

We are also not satisfied with the rates of introduction of the results of our scientific developments into practice. After all, Soviet automated air traffic control systems are not inferior to foreign systems in their technical and economic indicators and are superior to them in a number of parameters. Our industry is also capable of supporting the needs of civil aviation for modern navigation, electronic and radio engineering equipment. In short, this is a matter for our territorial administrations. But they for some reasons are not rushing. Why is this? It is certainly not economic. The existing planning and economic incentives system does not contribute to acceleration of introduction of new technology. The enterprises and administrations, reserving for themselves expensive automated systems, frequently find themselves in an extremely disadvantageous position according to their economic indicators.

Incidentally, the difficulties related to introduction of scientific advances into practice are typical for all sectors of the country's national economy. They matured long ago and are very painful, since they delay forward movement. And therefore, they must be resolved today, as was emphasized at the CPSU Central Committee Conference on Problems of Accelerating Scientific Technical Progress-- immediately, and the more decisively, the better it is.

There are now those who know how to deal with time requirements, adjusting to the march. We are working fruitfully in this regard with the collectives of the Leningrad, Northern Caucasus and Ukrainian Administrations, headed by V. Kolosov, V. Zamyatin and A. Goryashko. We have reached a full understanding here. And it is no accident that it is in these administrations that we have good results from operation of the automated air traffic control system.

But we are not especially satisfied from cooperation with the Western Siberian Administration. One cannot say that they are not hindering us here. They simply do not assist us in the proper manner. They do not contribute to improvement of the work, for example, there are complaints that installation of equipment for the automated air traffic control system and adjustment and testing of it is a prolonged process that requires restructuring of the working conditions of the enterprises and so on.

However, we are confident that the difficulties which we are experiencing with introduction will be solved in the near future. The time has now come. They require new approaches, new levels of thinking and this does not leave any possibility of vacillation. And we must be more persistent. Regardless, introduction is the main section in the process of scientific developments and of their results.

Aeroflot will begin to be equipped with new promising Il-96-300, Il-114 and TU-204 airliners with onboard complexes of standard digital pilot-navigation equipment, designed exclusively on digital components using electronic display systems, during the 12th Five-Year Plan. Simply speaking, they will have onboard computers capable of automatic flight from takeoff to landing under conditions of the ICAO category III meteorological minimum. But there are also problems here that require more accelerated solutions, primarily by scientific organizations and the OKB [special design offices] of the industrial ministries.

Much remains to be done on the ground as well. Our airports should accept and permit takeoffs of aircraft in practically any weather. But to do this, we must accelerate and expand work on further automation of air traffic control processes and aircraft piloting, we must increase the technical level of the equipment to be introduced, we must modernize the equipment to be operated and we must reduce the influence of the human factor on flight safety.

And, finally, the time has come to solve practically the problem of introducing essentially new air traffic control hardware, such as microwave landing systems, aircraft air collision warning systems, secondary radar systems with digital address interrogation and satellite communication, navigation and observation systems.

Implementation of the tasks posed by the party and government to the sector also requires that the organization of scientific research be improved. The degree of coordination and interaction of the Scientific Research Institute of Civil Aviation with scientific institutions and design offices of different industrial ministries and departments must be increased. It would be helpful if thought were given to creation of an intersector scientific center, which would include head scientific research institutions of other sectors of the national economy.

And what is obligatory is that this be a fundamental improvement of the interaction of scientific research institutes of our ministry, planning of joint work and creation for this purpose of temporary scientific collectives, delineation of pilot administrations of civil aviation responsible for introduction of new ground and onboard air traffic control hardware, a new planning and economic incentives system with regard to the need to convert our science to cost-accounting.

These are primary questions and it is necessary to solve them without postponing their solution. We do not now have the luxury of reorienting our thinking and management.

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MOTOR VEHICLES AND HIGHWAYS

GENERAL DIRECTOR ON AvtoZAZ PLANS, PROBLEMS

Moscow ZA RULEM in Russian No 12, Dec 85 pp 1-2

[Interview with Stepan Ivanovich Kravchun, general director of the AvtoZAZ Association, by Yu. Alekseyev, ZA RULEM correspondent; date and place not specified]

[Text] Zaporozhets -- quality, service, spare parts, a new model. A conversation between our correspondent and S. I. Kravchun, general director of the AvtoZAZ Association, was devoted to those questions which excite the hundreds of thousands of admirers of this model.

[Question] Stepan Ivanovich, this year marks the 25th anniversary of the beginning of serial production of the Zaporozhets. What distinctive features in the association's operations do you consider it necessary to single out in connection with this date?

[Answer] The Zaporozhye Kommunar Plant, the leading enterprise in our association, is one of the oldest machinebuilding plants in the country. It started in 1963 with the production of seeding machines, harvesters and hay mowers. Then, under the Soviet authorities, it became the first domestic builder of combines. In 1958, it was decided to transform it into an enterprise for the production of the first domestic automobiles with a small liter capacity.

The engine plant in Melitopol had to make the motors for them. Built at the beginning of the century, it had produced a small quantity of an entirely different engine -- low-speed diesels -- before this.

The first ZAZ-965 left our conveyor line in October 1960. Since then, we have repeatedly updated the model and gradually modernized the technology -- and all of this without stopping the production of the item. The 2,500,000th Zaporozhets will have been assembled by the opening of the 27th party congress.

Although it is possible to say in many respects that the plant has fundamentally changed its appearance, we had to adapt a number of technological processes to buildings that had been constructed long ago -- for example, the circuit breaker and assembly and painting works. They were located in shops whose

area and configuration did not correspond to the demands of modern-day automobile builders -- items for agricultural machines had been made there previously. As a result, our production lines were not placed in the best possible way. During assembly, the cabs had to be moved from one to another several times and this hindered the growth in labor productivity and had a negative impact on product quality. Nevertheless, the plant has worked smoothly, especially during recent years. Today, we are fighting not only to observe daily work schedules but also to strictly follow the hourly ones. This is contributing to the reliable fulfillment of the automobile production program and is leading to a decrease in waste because each worker manages to perform his operations calmly.

[Question] As is known, the Zaporozhets has been improved during recent years....

[Answer] Our first 965 was simple to drive and service. It possessed good maneuvering capabilities and high cross-country capabilities and quickly became popular.

Kommunar produced the model 965 and its modification for almost seven years, manufacturing approximately 320,000 vehicles in all. In 1967, we shifted to the ZAZ-966 model with a new body, more powerful engine and a modernized suspension system. It also enjoyed a large demand; however, time passed. We constantly worked at improving the design and, having produced approximately 270,000 966's, we put the ZAZ-968 on the conveyor line and then -- the 968A. They differed from their predecessors basically in another 10 horsepower increase in the engine's power and in greater comfort. Approximately a million of these machines were made.

Finally, our association began to produce the ZAZ-968M in December 1979. Now, while we are talking, machines with body numbers about 900,000 are coming off the conveyor line. This automobile is even more convenient to operate; in particular, it has a little more spacious trunk. Our designers paid special attention to increasing the dependability of the engine. Thanks to improvements in the ZAZ-968M's cooling system, it practically never overheats even in severe heat when operated correctly. Fuel consumption has been lowered, the dynamic indicators have been improved, and we will begin to equip the vehicle with radial tires in the near future.

[Question] Consumers, however, complain about the ZAZ-968M. For example, many complain about deficiencies in the heating system, the poor durability of some units in the working parts and poor quality of assembly.

[Answer] Quality is the primary question for us today. Hundreds of measures to improve the quality of the vehicles were made in the association's enterprises during the first four years of the five-year plan. ZARULEM readers, of course, are more interested in the results of the work than in the process itself. If you please: We received unsatisfactory equipment claims on 9.41 percent of all the automobiles produced during 1981, 7.31 percent during 1984, and approximately 6.5 percent during the current year -- that is, the number

of unsatisfactory equipment reports decreased by approximately a third during the current five-year plan. There were fewer complaints arriving directly in the association about the quality of the vehicles in the same proportion.

We understand, however, that this is still a great many and we are continuing our work to improve quality at all levels, beginning with the design one. For example, Zaporozhets owners frequently complained about the rapid wearing out of the half-axle necks and the insufficient life of the transmission when travelling over rural roads. Our comrades investigated the reasons and incorporated additional dirt protective covers on the half axles -- there were no complaints. Such unpleasant phenomena as the seizing of the engine's balance shaft, which occurred at times, were eliminated by the efforts of the designers. More recently, we have improved significantly the sealing of the cab and the trunk section. We have made many other similar improvements which are seemingly insignificant; but which have a very noticeable effect on the permanent operation of the vehicle. I repeat, this work takes place constantly.

Everything, however, is not within our capabilities. For example, take the heater. A new design, much more powerful and effective and capable of providing an interior temperature of up to +20° centigrade with a 40° below zero temperature outside, was developed in Kommunar more than 10 years ago. It operated quite noiselessly and was completely compatible with the present one. This heater underwent testing and we handed all of the documentation over to our allied plant -- the Shadrinsk Automobile Unit Plant. The Shadrinsk people are still chasing the old "stoves" which have been reviled by everyone. Unfortunately, it is possible to continue such examples.

The consumers are experiencing quite a bit of trouble because of the fact that the retail organizations are not performing the required pre-sale preparation of our vehicles although they have received money for it. Many automobile drivers themselves often forget that a modern automobile is a complicated machine that requires skillful and competent operation. A careless or clumsy attitude toward it inevitably leads to it not working.

[Question] Stepan Ivanovich, certainly, it is necessary not to accuse only the automobile drivers of this. The AvtoZAZ firm service network is still very weak and many Zaporozhets owners, who do not have any specialized knowledge and training are forced to service and repair them using their own resources. What is being done for them?

[Answer] It is necessary to admit that the reproach, which can be heard in your words, is justified. The firm technical servicing of the ZAZ automobiles is a sore point. We did not pay the necessary attention to it before the beginning of the Eighties. To put it simply, we did not have the resources which the Volga and Kama automobile plants, for example, had at their disposal to organize a service network run by them. Recently, however, things have begun to move. Although we now have 15 firm stations all told, we have received several assets and have concluded contracts for servicing the Zaporozhets with Soyuzavtotekhhobsluzhivaniye, Rosavtotekhhobsluzhivaniye and AvtoVAZtekhobsluzhivaniye. We have been allocated 22.5 million rubles to purchase complete

station automobile servicing sets from the Polish People's Republic and they are now being mounted in different rayons of the country. This year, one station has already been commissioned in Kishinev and another two will soon be opened in Voroshilovgrad and Krasnodar. Next year, we plan to open our service stations in Pskov, Lutsk, Melitopol, and Volgograd. We will also construct them beyond the Urals-- in Siberia and the Far East. We think that the network of firm service stations will embrace all of the main regions by the end of the 12th Five-Year Plan and that this sore point will be basically resolved.

[Question] As is known, not only equipment and repair specialists but also spare parts are required for the dependable operation of an automobile. Everything is not well with the Zaporozhets in this respect.

[Answer] Yes, unfortunately the growth in the production of spare parts did not keep up with the increase in the automobile pool during the 11th Five-Year Plan. During the present one, the situation has changed thanks to the measures that have been adopted. By 1986, the number of Zaporozhets will grow by 34 percent and the production of spare parts by 38 percent with respect to 1980. Of course, it is difficult to eliminate a shortage, which has accumulated for a long time, within a five-seven year period; however, we have already been able to correct something and it is extremely noticeable. Only 22 of the 1390 spare parts on the list are not assured normal delivery.

One must say that the organization of automobile servicing introduces quite a bit of confusion into the supplying of the consumers with spare parts. I recently found out to my surprise, for example, that there is a shortage of mufflers in Moscow and several other cities at a time when the plant warehouses are overstocked with them. That is why we decided to assume an additional concern about supplying the owners of the vehicles (at first -- invalids) with the necessary items and units through our own channels. Offices, which have registered invalids owning the Zaporozhets, have been established in practically all of the country's oblast and kray centers for this purpose. They have brought the plant to a category of consumer that requires special attention from all of us. These representative agencies receive more spare working parts from the enterprises. Now, if an invalid does not find the part he needs at the local service station, there is no need for him to turn to different departments, the plant's representative will provide the necessary help.

Again, it is necessary to mention that everything is not within our power. Nine of the 22 spare parts, which are still listed as being scarce, are on the conscience of our allied workers and it is very difficult for us to influence them. Now, however, the establishment of new production capacities is in full swing -- and we hope that we will be able to satisfy the demand for spare parts completely in 1988.

[Question] We have mainly talked about what comprises the day-to-day interests of present Zaporozhets owners. You see, however, it is no secret that the automobile drivers are expecting a new vehicle and already know something about it. Today, on the threshold of the party's congress and the new five-year plan it is possible to describe it -- of course, as much as is appropriate -- and what advanced designs are embodied in it.

[Answer] Yes, preparations are now taking place for the production of a second group of automobiles in the particularly small ZAZ-1102 class (very lively interest is being demonstrated in this class; we know this from the magazine). New shops, whose area will greatly exceed the presently existing ones, are being built in Zaporozhye and Melitopol. New technological processes, which are based on the use of automatic and automated production lines, machine tools with numerically programmed controls, industrial robots and mechanical arms, are being designed for them. It is planned to carry out the complete automation and mechanization of stamping operations and to perform the assembly and welding of the body's main units using high-capacity multi-electrode machinery and the overall assembly on flexible automated lines using 100 robots controlled by electronic computers. The production of items made from plastic using waste-free technologies will be expanded widely. Along with what has been done, all of this will permit the labor-intensity involved in the manufacturing of an automobile at all levels to be decreased by more than 20 percent and more than 2,000 workers to be freed.

[Question] If you please, a little bit more detail about how the future machine looks.

[Answer] In weight, external dimensions of the chassis and operating volume of the engine, it is possible to link the ZAZ-1102 with the present Zaporozhets. The first significant difference is the liquid-cooled engine. It is more powerful, reliable, longer lasting and economical than the air-cooled one used in all our past models. What is even more important is the fact that this engine is not a noisy one in accordance with present requirements.

The second substantial change in the design is that it is a front-wheel drive car and not a rear-wheel drive one. Thanks to this, the new model is more stable during travel and easier to control although the driver must get accustomed to its specific character. The third basic innovation is the very modern and economic arrangement of the vehicle: The power plant has been placed across the longitudinal axis of the automobile between the forward drive wheels and the passenger compartment has been combined with the trunk section into one area. Incidentally, it can be close in size to the trunk of the VAZ-2101 with seats for 4-5 or it can become threefold larger when the backs of the rear seats are lowered. The body has two side doors and one rear one similar to the VAZ-2108.

In addition, the new vehicle will have comfortable anatomical seats, an efficient ventilating and heating system, modern passive safety features and radial, low-profile steel belted tires -- everything equal to the best foreign models of this class.

[Question] Does this mean, Stepan Ivanovich, that you are planning to sell the new model in foreign markets?

[Answer] Just so. A certain amount of experience in export deliveries has been accumulated in the association and it is a matter of honor to make the ZAZ-1102 competitive according to all international standards.

[Question] Will this machine have modifications for the disabled?

[Answer] To be sure. You see, we are the only automobile plant in the world which assembles vehicles for the disabled on the main production line and we are proud of this. The association's collective is working to create a continuous sense of responsibility for the fact that hundreds of thousands of people, who have suffered seriously in war, at work, and from accidents and illness, are acquiring an opportunity to lead a new and active life of full value thanks to our vehicles. Three modifications for the disabled to the 1102 model are now undergoing testing at Kommunar.

[Question] As we have talked, approximately a hundred samples of the new model have been manufactured. The front-wheel drive ZAZ have become so common in Zaporozhye that even young children run by them without paying any special interest to them. Will we soon see the ZAZ-1102 in automobile dealerships?

[Answer] The answer is not simple. We have already said that the mass production of the new model is impossible without radically reconstructing the plants-- the automotive and engine ones -- and there is still quite a bit of work ahead of us. In addition, we want the ZAZ-1102 not to be a fundamentally new one only in its design.

To tell the truth, machine builders often produce new items in series without having completely worked out all the items and assemblies and without having overcome "children's illnesses". We think that it is time to put an end to this practice. A large amount of finishing work is now being scrupulously performed on the new model. Everything is not going smoothly, however.

We are having problems with the engine also: The Leningrad Carburetor Accessory Plant has still not developed the appropriate fuel equipment for it, the Michurinsk plant still cannot provide high quality piston rings for the new motor, and work is being done to build a reliable ignition system without points which would correspond to modern requirements.

[Question] For all that, when does the association plan to begin serial production of the front-wheel drive Zaporozhets?

[Answer] We will begin it during the 12th Five-Year Plan without fail.

[Question] Will the production of the ZAZ-968M and spare parts for the previously produced models be maintained during this?

[Answer] Without a doubt. We will continue for some time the production of the rear-wheel drive vehicle along with the production of the 1102. We hope to turn out sufficient spare parts for the entire pool of former Zaporozhets so that their owners will be supplied with everything necessary for several years in the future. We are very interested in the well-being of the consumer.

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RAIL SYSTEMS

DEPUTY MINISTER ON NEED FOR COMPUTER USE IN RAIL TRANSPORT

Moscow GUDOK in Russian 5 Dec 85 p 2

[Article by V. Arkatov, Deputy Minister of Railways: "Five Levels Of Railway Automated Control Systems--A Strategy For Computerized Control Of The Transportation Process"]

[Text] All specialists now agree that given contemporary scales and speed of operations, it is impossible to effectively control the transportation process without the widespread use of automation and computer equipment. However, there is no unanimity as to what forms the strategy and tactics should take for introducing computer technology. This impedes the purposeful use of the total arsenal of technical assets and methods to attain maximum effectiveness of the transportation process throughout railroad networks as a single organism.

What is the situation currently obtaining? Take, for example, an important production element of a most intricate mechanism in the transportation process as the sorting station. Dispatchers and operators here currently are simply unable to cope with the processing of information flow. The overload does not permit them to rapidly and correctly make decisions in a changing operational environment. Information is frequently lost, and data relating to actual train and switching operations is corrupted. The operations plans which have been developed are far from valid.

Another example is organization of train traffic within sectors and departments. The train dispatcher in one sense is overloaded with information, and in another sense, is experiencing an "information famine." He has a great amount of routine information coming in, but information relating to the actual train situation in the sector is insufficient. The actual picture as to deployment of freight, passenger, and special trains within the sector in a changing environment remains "in the background." Under such conditions, it is difficult to make a singularly valid, optimal decision.

Railway computer centers now provide models for train and switching operations which are extremely inaccurate in reflecting the actual situation at a specific time within the sectors and on the railroad overall. The reasons for this are lack of current data or absence of information required, erroneous or corrupt data, etc. Numerous such examples can be cited.

It is obvious that it is not a matter of certain specific shortcomings, but a lack of a well-conceived strategy for improving control of transportation based upon advanced technology. It is necessary to create a new organizational-technological structure of control.

What form should this structure take? It must include five levels. The first are STsB units at stations and between-station intervals. The second consists of local automated units for collection from STsB units, processing, conversion, and output of information to work stations of dispatchers and duty operators. The third level includes station computers with operational-production data banks pertaining to the operational activities of stations or junctions. The fourth level is unified railroad centers with powerful computer systems and personal computers located at the work stations of train dispatchers which provide control of sectors and departments. The fifth is a unified center of transportation control throughout the entire railroad network within MPS (Ministry of Railways) based on super computers and personal computers installed at work stations of the main dispatcher for the apparatus and of ministry-level managers.

At this time, of the five levels of control listed above, two are in operation: the first and third levels. The third (the sorting station ASU) operates in isolation from actual production processes, inasmuch as there are no apparatus and programming connections for the computer with the STsB units. Information regarding arrival, reform, delivery of rolling stock to the dispatch pool, location of switching locomotives, and update information relating to changes in the progress of sorting, shifting cars from line to line, or from pool to pool are fed to the ASU by the operators. But these are people, and people by nature are subject to error and fatigue. As a result, information is lost, late, or corrupt.

The introduction of local second-level automated units takes on particular importance in this regard. Only they can provide duty personnel with complete and accurate operational-technological information.

For example, an automated advisor "assigned" to the arrival yard can report in a timely fashion, and more importantly, accurately all information required on receipt and processing of trains to the yard duty personnel. Engaging in a dialogue with such an automated unit and with the sorting station ASU computer, the duty person can make optimal decisions. He receives the train receipt plan, the operational plans for trains and switching operations, data on the condition of the yard lines, on the locations of locomotives, and plans for repair and other operations. All this, as the computer specialists say, is in real time, i.e., at any given time.

Automatic registration of all time parameters for production operations in the arrival yard enables the duty switching dispatcher to make timely decisions regarding reforming of rolling stock. Most importantly, this provides for the automated working of the traffic completed schedule.

At the gravity sorting yard, the local information-control complex, in addition to qualitatively improving the sorting process (route assignment for uncoupled

cars, controlling rolling speed), must be given "intellectual capabilities" and the ability without human intervention to complete optimized tasks.

Overall, such complexes must, for example, provide for number control and accounting of car concentrations on the lines, automated switching movements in the yard area, and monitoring of operational-production situations, particularly to identify "aliens" (those cars not on their assigned routes) with an indication of the inventory number. The automated units will indicate the location of switching locomotives, signal regarding car concentrations on the lines, and report on completed sorting, etc.

Currently, at major sorting facilities, the switching dispatcher runs like a squirrel in a cage. Local automated units could significantly facilitate work and also make him more productive. On the display, he could determine at any time the condition of the lines, signals, and lights, route indications, the deployment picture for locomotives, positions for limit signals, etc.

He could see on the display screen the progress of operations and the schedule which had been executed. The schedule compiler would trace it, and a printer device could at any time issue the necessary data, and summarize operational results at the end of the shift.

The complex of local automated units installed in all primary production elements of the sorting station and operating in close communication with the ASU computer system, creates conditions for effective control.

Factories of the routes contemplate creating command centers for control with unified collective-use display and individual work stations for the station dispatcher, senior car foreman, locomotive dispatcher, and other operations personnel. From the data banks, they can obtain plans for receipt and dispatch of trains, daily, shift, and operations plans for trains and switching operations, and also for train formation by sorting systems and for local operations. At any time, the electronic devices provide all necessary information.

Thus, the topic under discussion is a matter of a basically new stage in the radical improvement of transportation management. The opportunity is at hand to create unified centers for the concentration of operational control of the railroad. To do this, it is necessary to "teach" the automatic devices to provide a dynamic model for train status. In coordination with centralized dispatch devices, a real capability exists to automatically display the movements of all trains in the sectors with their numbers indicated.

The dispatcher, at his work station, can at any time, with the aid of a display or printer, obtain advice as to optimum regulation of passenger and freight traffic, and to find solutions to situations caused by disruptions. Of course, train dispatchers are freed from manual working of the schedule. The automated units do this considerably better for them.

Such unified centers of railroad management will be connected as closely as possible to first-level automated systems for control (STsB devices), with local automated advisors, and with information-control systems and complexes

at the second and third levels within the management hierarchy. These centers continuously receive information from the means of control and reporting of train passage at railroad junctions, at railroad computer centers of combined railroads and of railway transportation industrial enterprises.

The fifth and highest level of management for the transportation process will be the unified control center at the MPS. The basis of its operation is the ministry's Main Computer Center, connected by data transmission channels to management centers on the railroads. These centers will effect control over shipments within railroad regions and within the overall network.

Unconditionally, all five ASU levels must be based on the most modern equipment possessing qualitatively new and significantly greater operational capabilities.

As the CPSU CC General Secretary M.S. Gorbachev indicated at the April (1985) CPSC CC Plenum, a revolutionary shift is required--a transition to a basically new range of technological systems, and to the latest generation of technology yielding the highest efficiency.

In creating the means of automation, it is mandatory that peculiar aspects of transportation operations be taken into consideration. A primary requirement is an extremely high reliability and viability for local subsystems within the overall ASU. Important also is the provision of unified equipment to meet varying tasks in the control area, regulation, management, transmission, and display of data.

The chief requirements for the establishment of railroad automation, telemechanics, and computer technology may be formulated thusly: a systematic approach at all stages of development, introduction, and operation of the system. The maximum possible unification, standardization, and typification of the design base must be provided. The use of a broad range of standard models will be pursued with consideration given to possible aggregate use. Lastly, industrial methods will be employed in the development, manufacture, and introduction of this new equipment.

To automate the second level of management, aggregated microprocessors of the "Microdag" type as used by MPS plants can be employed. Similar equipment is currently finding broadest application in all sectors of the national economy. Their functional capabilities enable them to provide the logic and design components for systems capable of solving a rather large range of problems for railroad transportation as well.

Based on typification of structures, unification subsystems created, use of basic programming and development of programming packages directed at the solution of standard control and management tasks, a significant reduction can be achieved in times required for design, construction, and introduction of new equipment.

The experience of developing, introducing, and testing of the gravity sorting yard microprocessor complex in Krasnyyy Liman demonstrated that selection of

devices for second-level production process control was correct. It is now necessary to proceed toward full automation at all levels of management for the transportation process both for the railways as well as for other types of transportation. Automated control systems from other types of transportation must interface.

I would propose that the VII Section of Basic Directions for the Economic and Social Development of the USSR contain: "Improvement is to be persistently sought for the management of transportation based upon the broad employment of modern automation, telemechanics, and computer equipment and of economic-mathematical methods."

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RAIL SYSTEMS

LAGGING USE OF COMPUTERS WITHIN SOUTHWESTERN RAILROAD

Kiev PRAVDA UKRAINY in Russian 4 Jan 86 p 2

[Article by A. Kaganskiy, special correspondent: "ASU Seeking Employment"]

[Text] Considerable resources are being expended to establish ASU. But is there always an appropriate return? We attempted to get an answer to this question at the Railroad Computer Center (DVTs) of the Southwestern Mainline. It is a major and complex enterprise of the railroad, operating around the clock, and equipped with electronics, electromechanical equipment, and special engineering equipment. Workers of the center, situated in a modern, new building are provided the necessary conditions for productive, creative work. Here, however, the ill-fortune--although the DVTs has been in existence for 5 years now, its impact is minor in the intensification of the economy's freight shipments, for passenger traffic, and in the improvement of train and freight operations.

Take, for example, a major sorting station as Darnitsa, where ASU has been in operation more than a year. To this time, a number of tasks are yet to be completed here. Beginning in October, the station ASU was converted to a new type of computer. Because of unreliable operation by certain components, errors in mathematical support, poor training of personnel, and incomplete and invalid train information, serious outages occurred in both ASU operations and the operation of the station itself. Year after year, an important indicator such as through car demurrage with freight processing is not fulfilled. And, as is well known, car turnover is impeded, and losses of loading resources occur as the result of above-norm demurrage. The recent reconstruction of the station failed to rectify the situation. As before, rolling stock formation plans are grossly violated. Lagging provision of locomotives and other errors and lapses cause long delays of freight trains ready for dispatch to routes.

In the opinion of specialists, automation of production processes based on microcomputers provides for a reduction car demurrage at operational stations and more effective use of cars and locomotives. According to preliminary calculations, this innovation will produce approximately 950,000 rubles in savings annually. The system was earmarked for introduction here back in 1984. Scheduled, but not completed, even though the railroad requires the assistance of computer technology. In the Zhmerinka, Kazatin, and Korosten divisions of the mainline, major difficulties are being encountered with the deployment of

computer technology, and it is still slow to be adopted. There are other serious lapses and shortcomings, which were related by the deputy chief for ASU, road traffic service, V. Ostapenko.

"Deadlines for turnover to operations of certain ASU projects for the railroad are being carried over from year to year. For example, in the Kazatin department, a test of the process for automatic car number reading was to take place back in 1983. However, this urgent task is being completed only now. Connection of work stations for railroad division chiefs, their deputies, chiefs of traffic departments, and duty dispatchers at the division level to the ASU system was delayed for an intolerable time. This lack of speed negatively impacts on the shipping process. Almost one-third of the through trains coming in from the Donetsk and Pridneprovsk railroads remain as though "unnoticed" by the Odessa Railroad. That railroad simply does not inform the neighboring junction station of Mironovka about those trains. Lacking exact information about those trains, the Mironovka transportation personnel delay excessively the processing of such rolling stock."

We would add that the Novograd-Volynskiy and Penizevichi stations, together with the Korosten terminal, provide poor input of such information for the railroad's Kazatin division shipping process ASU system. There are numerous cases where information is lost because of machine downtime. This also causes unproductive car and train demurrages. What is more, the DVTs, signal and communications services, electrification, and power organizations display an incomprehensible apathy toward such phenomena.

"It is mandatory for computer equipment assets to now provide for receipt of data on the condition and forecast of remaining reserves for electric and diesel locomotives, other transportation means, and to automate planning and uninterrupted control over preventive maintenance operations," relates the chief engineer for railroad locomotive service, V. Skripnik. "Assistance in this for the locomotive service is negligible. I'll cite such an example. The DVTs compiles a so-called personalized operations schedule for freight train locomotive brigades a month ahead. They are necessary for the timely delivery of products to consumers. With changes in the situation, a common occurrence, these personalized schedules must be adjusted. The schedule developers themselves cannot find the optimum solution. For locomotive depots in the Kiev and Zhmerinka divisions, documents and routes are processed on computers for the engineers. They reflect train weight, passage times for sections, power and fuel expenditures, and other indicators. Based on the route sheet, effectiveness of depot operations is determined and wages are computed. However, it is not a simple matter to obtain such information from the DVTs. As usual, it is supported by manual methods for processing material."

The computer center also exerts little impact upon such important indicators as increasing productivity of labor for ticket outlets, on ticket sales service to passengers, more rational use of train seating, and reduction of time required for ticket purchase.

"The railroad has introduced the promising 'Express-2' system," explains the Southwestern Mainline administration's passenger service chief engineer,

N. Yefremov. "Just in Kiev 100 ticket outlets are connected to this system. But this is not for the entire cycle of ticket pre-sales. At the central railroad station in Kiev, the DVTs assumed one-third of the operation for seat allocation. A major portion of tickets are being sold manually as was the case previously. The reason is the same--frequent machine downtime."

Irrespective of whom we spoke with, all in concert named the DVTs as the out-of-order mechanism, and each cited his own proof of that. For example, the railroad dispatcher, in order to precisely control train traffic on a certain mainline in a given direction, must be thoroughly aware of the train situation at any time, both over a 24-hour period and for longer timeframes. Such a forecast must be made by a machine. It must be, but isn't. And, the absence of a projection means that locomotives will not be supplied in a timely fashion, and brigades will not be sent out. It gets to the point where trains are even "abandoned" at intermediate stations.

Workers at the center, and it has an extensive organization, know well that the operation of the DVTs on the railroad is unsatisfactory. Nevertheless, good naturedness and complacency reign within the collective. Even at a recent reporting-election party meeting, the speaker, the secretary of the party buro, N. Kotlyar, did not consider it necessary to delineate in a candid and party-like approach those reasons underlying the poor performance of the center and to render a principled evaluation. This serious matter was skirted by silence also in the report of the labor committee.

We spoke with the chief of the computer center, I.P. Nikulin.

"We have grown, as it is expressed, from zero," Ivan Petrovich stated. "In the future, we will do considerably better..."

And that is all. Such is the evaluation of the existence of the DVTs over three 5-year plans. And it is precisely that, existence; it cannot be called anything else. The position of I. Nikulin can only elicit surprise. Afterall, today as never before, transportation with its scope, is in acute need of automated control of shipping. There is no time for indecision. Every day, every hour is valuable. Without the active adoption and introduction of modern computer technology as a new and reliable tool of management, scientific-technological advance in the sector is simply unthinkable.

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MARITIME AND RIVER FLEETS

LAUNCHING OF SEVMORPUT NUCLEAR-POWERED LIGHTER, CONTAINER SHIP

Moscow PRAVDA in Russian 21 Feb 86 p 6

[Article from Kerch by PRAVDA special correspondent V. Chertkov: "Northerner in Southern Waters: From the Place of the Event"; first paragraph is boxed introduction]

[Excerpts] The launching of the first icebreaking lighter-container carrier in the world with an atomic power plant, the Sevmorput, took place yesterday at the Kerch "Zaliv" Shipbuilding Plant imeni B.Ye. Butoma. In November 1984, the shipbuilders had promised to dedicate this event to the 27th Party Congress. They have kept their word.

It seems unreal that they only started building the ship as recently as a bit over a year ago. I saw at that time how the steel sections and blocks [modules] were being assembled in order to "sew" the giant together from them by the present day. Her length is almost that of three soccer fields put together. The living-quarters superstructure has been thrown majestically upward above the main deck. The Captain's bridge crowns it, its field of vision having spanned the lighter carrier's entire width--somewhat more than 32 meters. Already indicated on the hull is the ship's port of registry: Murmansk. Yes, she is to break the arctic ice. The Sevmorput will be able to proceed under her own power in an unbroken ice field, the thickness of which reaches almost 1.5 meters.

The lighter carrier's power is 40,000 horsepower, and her speed is 20 knots. And, although the nuclear reactor has lain in the ship's bowels for only 24 hours and still has not "raised its voice," you mentally picture both this power and this speed of the Sevmorput. She does not require moorages: 74 lighters, each of which is capable of carrying 350 metric tons of cargo, will deliver cargoes to landfast ice.

During the hour before the launching, I chat with the new ship's Chief Project Designer N.N. Rodionov--the lighter carrier was designed by the Leningrad people. "In her specific power/displacement ratio," says Nikolay Nikolayevich, "she has no equals among transport ships. The Sevmorput also has been given the highest safety rating that the special international code defines for nuclear-powered ships. The shielding integrity of the reactor vessel will not be impaired even if Sevmorput collides with some other ship (and such things happen), if she runs aground, or if an aircraft crashes on her deck. The radiation background on the lighter carrier is no higher than the worldwide--such is the biological protection here."

The crew of the multipurpose ship, which can operate at any latitudes, will consist of 74 persons. Each will have a private stateroom.

And the dock, meanwhile, is filling with water. As soon as it reaches the 7-meter mark, and the ship just barely rolls, there will ring out "Hurrah!"--she will be afloat. However, not yet leaving the dock, the Sevmorput underwent severe ordeals. Several days ago, the rains in Kerch were followed by freezing weather, and the lighter carrier was covered with ice. It was nice to see her as if in her own element, but this became a downright hardship for the shipbuilders. Like polar seamen, they chipped away at their offspring day and night, in order not to disrupt the construction work, and in order to keep their word given to the homeland.

[Continuing to quote Shipyard Director N.A. Volkov:] "The plant's designers, technologists, skilled craftsmen, chiefs of shops and sections, and senior specialists made a large contribution to the labor victory. Of course, it is not we alone, who are building the nuclear-powered ship, but the whole country, hundreds of enterprises and organizations of many cities."

The dock is filled. A biting wind blows in from the sea with a cold rain. But no matter. It seems to make no impression. Absolutely none, it seems! For him, A.A. Voloshin, the nuclear-powered ship's chief builder, nothing exists at the moment except the ship, which the tugs are just towing out of the dock through its open gate.

The Sevmorput enters real waters; as yet, it is true, southern. Anatoliy Antonovich's face is intent. The Sevmorput goes on to her first mooring wharf. Time flies swiftly. That day is not far-off, when the new ship, completely fitted out, will ride the waves on her own power.

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MARITIME AND RIVER FLEETS

HISTORY, ACTIVITIES OF SAKHALIN SHIPPING COMPANY

Moscow MORSKOY FLOT in Russian No 11, Nov 85 pp 21-23

[Article by S. Kamyshev: "A Shipping Company on an Island"]

[Excerpts] The Sakhalin Shipping Company was 40 years old in October 1985. It has followed a complicated path of development. Established in 1945, the shipping company had 13 obsolete ships with a total carrying capacity of 35,000 tons. Their age ranged from 20 to 34 years, and their average speed barely exceeded seven knots. They were, however, workers! They delivered people and freight to Sakhalin without interruption under very severe weather conditions in the basin without having radars, gyrocompasses, sonic depth finders and ground logs and with poor power plants. The shipping company's transport fleet carried 130,000 tons of cargo and 33,000 passengers during its first year of operation.

At the present time, the Sakhalin Shipping Company is a highly developed transportation unit with multi-faceted activities.

The shipping company's fleet consists of 82 transport vessels of varying purposes. Their total dead-weight is more than 400,000 tons.

They are solving an important and critical mission, transporting more than 10 million tons of national economic cargo to Sakhalin and Magadan oblasts and points in Khabarovsk Kray and the arctic each year and insuring the delivery of export-import goods.

The shipping company's eight ports play an important role in guaranteeing this freight traffic. Located on Sakhalin and in Khabarovsk Kray, they handle more than 20 million tons of cargo a year. The port fleet, which is composed of more than 350 vessels, transports more than 1,800,000 tons of cargo and 700,000 passengers a year.

Important tasks have been assigned to the shipping company's collective during the 11th Five-Year Plan. The plan provides for increasing shipments using all types of vessels by 19 percent, bringing the volume of loading and unloading operations in ports to 20.6 million tons, and insuring a growth of 23.5 percent in freight turnover.

These tasks are being successfully solved. The fleet's work has been introduced according to schedule on all lines with steady freight traffic. Half of the shipping company's vessels are operating this way at the present time, they are carrying approximately 70 percent of all the freight in coastal and overseas trade.

The schedule increases the responsibility of seamen, port workers, workers in allied types of transportation, and the dispatchers and recipients of the cargo.

The work of the fleet was organized according to a schedule on the Korsakov-Kurile Line in 1982. This has permitted the shipping company to decrease fleet demurrage at unloading points by more than 30 percent with an increase in the volume of shipping.

The shipping company is paying a great deal of attention to the expansion of packaged shipments, especially on the Magadan, Moskalvo, and Kurile routes. The shipment of cargo in 20-foot containers has been successfully introduced on the Korsakov-Moskalvo Line.

Existing containers, however, are insufficient for the complete containerization of cargo, especially on the Korsakov-Kurile Line where transshipping on roadsteads is being done using the forces of the vessels' crews.

It is especially important to single out the stacked shipment of export lumber which was begun at the initiative of the Motor Vessel Pioneer Sakhalina's crew in 1974. The crews of the Pioneer Kholmska and Pioneer Rossi vessels have successfully mastered the shipment of stacks without using standstill (racks) by placing deck hooks in a non-traditional manner along the vessel and across it. The economic effect from this shipping method has reached more than 1.50 rubles per ton of cargo. The Regulations for Maritime Shipment of Timber Cargo have been supplemented by a special section entitled "The Transverse Stowing and Fastening of Stacks of Round Timber on a Deck Without Standstill" based on material from test trips by the Motor Vessel Pioneer Rossi and work done by the shipping company's planning and design bureau on this method.

A great deal has been done in the field of improving port operations. New technological processes have been introduced for transshipping timber, large diameter pipe, rolled metal, paper, and bagged freight which is transported from the sender to the recipient in prepared packages.

The level of integrated mechanization in handling cargo in ports has increased by 12.1 percent during the last 10 years and has reached 94.2 percent. This has not only permitted the processing of vessels in ports to be speeded up but has also allowed the labor productivity of the longshoremen to be raised.

The shipping company is paying a great deal of attention to increasing the average annual operating period of the vessels by introducing new technical servicing systems with a four-year operating and repair cycle. The budget for repair time has decreased from 9.4 percent to 7.5 percent during the last 10 years, and the average annual operating period is now 335 days.

The vessel crews and shore services workers have performed a great deal of work to improve the fuel usage structure. A total of 65 main and 33 auxiliary engines have been shifted to rational types of fuel. The economic effect has reached 855,000 rubles.

Along with the arrival of new automated vessels, equipment consisting of completely automated power plants for Petrozavodsk-type vessels and remote control systems for the main engines on Mirnyy-type vessels have been introduced. The economic effect from using each of these systems is 20,000 rubles.

Constant attention is being paid to improving management. Modern electronic computers have been put into operation. They are solving complex tasks in operational accounting and reporting, the monitoring and analysis of the main production activity, the statistical accounting and registering of personnel, the operation of the fleet, fuel usage, etc.-- 20 tasks all told.

The continuous growth in shipping volumes and the need to improve the fleet's operating effectiveness require more progressive forms for coordinating the different types of transport. Transport hubs based on the ports of Vanino and Korsakov have been established in the Sakhalin Shipping Company. Since the transport hubs have been operating, the shipping of cargo from the ports has been improved, freight storage periods have been decreased, the gross rate for processing the fleet has increased by 18.8 percent, and freight car demurrage has been lowered by 62.6 percent.

The shipping company's material and technical base will be further expanded with the growth in the production forces of the rayons in eastern Siberia and the Far East and with the completion of the construction of the Baykal-Amur Mainline. The replenishment of the transport fleet with special vessels capable of operating under severe ice conditions will continue; the introduction of lighter shipping into the region's roadstead points is being planned; the technologies for shipping and for the transshipping process in ports will be improved; and the shipping company's shore installations will be further expanded.

In conclusion, it is necessary to point out that -- despite the replenishment of the shipping company's fleet -- it is still insufficient even for guaranteeing traditional freight traffic in the Far East basin, without mentioning those shipments that are being carried out today from our rayons using foreign vessels.

In order to satisfy the growing economic needs of the basin rayons that are serviced by the Sakhalin Shipping Company's fleet, it is necessary to bring

the number of transport vessels to 100 units with an overall cargo carrying capacity of no less than 500,000 tons. That is why the replenishment of tonnage is one of the most important problems for the shipping company in the future.

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MARITIME AND RIVER FLEETS

HISTORY, ACTIVITIES OF 'INTERLIKHTER' ORGANIZATION

Moscow VODNYY TRANSPORT in Russian 7 Dec 85 p 3

[Article by the senior reviewer for CEMA, N. Reshetov: "The Caravans of 'Interlikhter'" under the ruric: "Business Collaboration"]

[Text] Bombay, Calcutta, Karachi, Rangoon, Ho Chi Min City - the names of these large port cities have become commonplace on the walls of the shipping enterprise Interlikhter - the first multilateral economic and transportation organization of the countries who are members of CEMA. Interlikhter has staff offices in Budapest. Created in 1978 by a decision of the governments of Bulgaria, Hungary, the Soviet Union, and Czechoslovakia, it carries out the transport of cargoes, without transshipment, between the river ports of the countries along the Danube and the seaports of Southern and South-East Asia. To provide for the continuity of this cycle, powerful towboats regularly deliver loaded lighters - floating containers - from Danube ports to the mouth of the river. Later the lighters complete the route along the Black, Mediterranean, Red, and Arabian Seas.

With the entry into operation of the lighter carrying system, the time for delivering cargoes from the Danube countries to ports of the Indian ocean and return has been shortened more than twofold. Now, the average duration of a round-trip voyage of the flagships of the enterprise, the "Yulius Fuchik" (on the Danube - India, Pakistan line) and the "Tibor Samuelli" (to ports of South-East Asia) is one month, and there are ten voyages a year.

The enterprise, being a legal entity in the countries of its presence, has a fair degree of independence. The intergovernmental agreement on its creation provided that it has the right to conclude contracts, to acquire, lease, and alienate property, to sue, and to respond in judicial and arbitration organizations. It can open its own branches and representation on the territories of the founding countries according to agreement with their competent organizations, and also on the territories of third countries in the established legislative procedure of these countries.

Since Interlikhter is occupied preeminently in the transport of foreign trade cargoes, the right of independent foreign trade activity is granted to the enterprise by the founding documentation.

Interlikhter operates on the principles of independent accountability. To provide for economic activities, a reserve fund of 65.5 million transfer rubles has been created which is formed from equal portions of the fees of the participating countries.

Transfer rubles, Hungarian forints, U. S. dollars, FRG marks, Austrian shillings, and Pakistani and Indian rupees - in these currencies Interlikhter operations are carried out in the Hungarian National Bank, the MBES, [International Bank of Economic Cooperation], the MIB [International Investment Bank of CEMA] and other banks.

The material and technical base of Interlikhter is made up of its own and leased facilities. The high level of lighter-carrying technology used by the enterprise is provided for primarily by the utilization of the lighter carriers leased to the Soviet Danube Shipping Company. The lighter carriers, on each of the three decks of which 26 lighters are accommodated, in their technical characteristics satisfy the most modern requirements. The fundamental basic facilities of Interlikhter now add up to 200 lighters obtained from the participants at the expense of their proportionate fees in the reserve fund of the enterprise, and 935 containers of the international class.

Interlikhter is a young enterprise, however; already it has had time to give a good account of itself. Now, according to understandings with the partners, a substantial increase is being considered in the volume of import cargoes by an expansion of the maritime region, a further increase in the carrying capacity of lighter carriers, the efficient composition of cargoes, the development of container transport, and allocation of services to clientele by the transport of small consignments in containers.

Interlikhter is only entering into its economic and commercial maturity. The planned build-up of a network of representatives of Interlikhter in Pakistan, India, Vietnam, and other countries of South-East Asia promises large profit. And today, requests for the transport of cargoes exceeds the capabilities of the enterprise. Therefore, it is confronted with the problem of acquiring additional lighters and containers. Especially in the Indian Ocean, the use of a new feeder lighter carrier is being planned.

The high prestige of Interlikhter in business circles in many countries has been perceptible especially as, in its background, the shipping companies of the West are not able to get out of the whirlpool of crisis.

The present business and prospects for this enterprise speak to this, that the creation of interstate organizations of countries who are members of CEMA with their combined capital, is a business profitable for all participants. And therefore on the route, the Interlikhter caravans are loaded with Czechoslovakian pipes, Hungarian metal, Bulgarian bearings, Soviet paper, Indian rugs ...

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MARITIME AND RIVER FLEETS

PROBLEMS NOTED IN RIVER FLEET'S 1985 PERFORMANCE

Moscow VODNYI TRANSPORT in Russian 18 Jan 86 p 2

[Unattributed article: "In the Collegium of the RSFSR Ministry of the River Fleet and the Presidium of the Central Committee of the Maritime and River Fleet Workers' Trade Union" under the rubric: "Official Section"]

[Text] A joint, expanded meeting was convened of the Collegium of the Ministry of the River Fleet and the Presidium of the Central Committee of the Trade union of the Workers of the Maritime and River Fleet at which the question of the results of the operation of the shipping companies in 1985 was considered and also measures for the fulfillment of the Plan and the socialist obligations adopted for 1986 in the new conditions of management.

An analysis of the state of affairs in the industrial sector was given in the report of the minister of the river fleet, L. V. Bagrov. The labor collectives of the river fleet fulfilled the Plan for the volume of cargo transport under the difficult conditions of the past year. More than 72 million tons of cargoes were delivered into the regions of the Far North which exceeds the planned assignment. Transport was provided for all cargoes presented of the basic products list, and also for outsized and heavy equipment. In the ports, national economic cargoes were processed in an amount 22.2 million tons above the state assignment. The industrial sector fulfilled the socialist obligations for realized products and the productivity of labor.

Nevertheless, serious deficiencies were permitted in the past navigation season. Thus, only 16 shipping companies fulfilled the Plan for the shipment of cargoes. The assignment for cargo turnover was underfulfilled by 15 billion ton-kilometers. Planned assignments for gross productivity were not fulfilled and a high level remains of idleness in the fleet. The Plan for the transport of passengers also was not fulfilled. The assignment for profits was underfulfilled by 70 million rubles. The plants of the industrial sector did not cope with the assignment for new shipbuilding. There are a number of other negative indicators of the activities of the river collectives.

The minister of the river fleet elucidated in detail the problems confronting the collectives of the river fleet in connection with the fact that the industrial sector has changed over to a new system of management.

The deputy chairman of the RSFSR Council of Ministers, L. A. Gorshkov, and the deputy of the chief of the Department of Transport and Communications of the CPSU Central Committee, V. I. Davydov, spoke at the meeting.

The chiefs of shipping companies, the chairmen of the basin committees of the fleets, specialists of the ministry and scientists attending the meeting approved the socialist obligations of the workers in the river transport of the Russian Federation for 1986; and they ratified organizational and technical measures for assuring fulfillment of the Plan and the adopted obligations.

K. Yu. Matskyavichyus, the secretary of VTsSPS [All-Union Central Council of Trade Unions], Yu. A. Mikhailov, chief of a sector of the Department of Transport and Communications of the CPSU Central Committee, and important workers of the USSR Council of Ministers, the RSFSR Council of Ministers, USSR Gosplan, RSFSR Gosplan, ministries and departments took part in the work of the meeting.

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MARITIME AND RIVER FLEETS

CONSTRUCTION OF BAGAYEVSKIY LOCKS ON DON URGED

Moscow VODNIY TRANSPORT in Russian 16 Nov 85 p 2

[Article by the senior scientific associate of the council for the study of productive forces in USSR Gosplan, A. Antonnikov: "The Numbers Shout, in the Ministry They Are Silent" with the subheading: "On the National Economic Necessity to Construct the Bagayevskiy Lock on the Don" Passages rendered in all capital letters printed in boldface in source]

[Text] The Unified Deep-Water System (YeGS) of the European zone of the USSR occupies the leading place in the development of river transportation. It is on that system that about 75 percent of All-Union river transport arrives. The designed and guaranteed shipping depth on the YeGS is four meters which will permit navigating highly efficient large-tonnage ships having a draft of 3.5 meters.

The reconstruction of the White Sea-Baltic canal, and the filling to designed level of the Cheboksary and Nizhne-Kamskiy reservoirs and the lockage of the Lower Don, which is a component link of the YeGS, are the concluding stage of the creation of the European system.

The lockage of the Lower Don by the Nikolayevskiy, Konstantinovskiy, and Bagayevskiy locks will permit firstly, increasing the guaranteed shipping depth on the Lower Don from 3.5 to 4 meters. Secondly, it will increase the throughput capacity of river transport thanks to the use of a large-tonnage fleet. Thirdly, it will lower annual expenditures by 32 million rubles and reduce the annual transportation drawdowns from the Tsimlyanskiy reservoir, under average hydrological conditions, from 440 to 300 cubic meters per second; and then, after carrying out deepening work below the Bagayevskiy lock, to 170. In all, it is reduced by 270 cubic meters per second or 5.7 cubic kilometers per year (for the navigation season).

From the point of view of water economy, such a reduction of the drawdowns of water for transportation from the Tsimlyanskiy reservoir means an annual saving of 5.7 cubic kilometers of Don water which, according to the cost of transferring northern stock into the Don, is appraised in capital expenditures as over 1.7 billion rubles and an annual operational expenditure above 17 million rubles.

The managers of RSFSR Minvodkhoz [Ministry of Water Resources] clearly realized the huge water conservation effect of the lockage of the Lower Don, so without delay they set about carrying out this measure which is useful to them. Initially, the Nikolayevskiy lock was built and put into operation, and then the Konstantinovskiy. And it would seem that Minvodkhoz will set about the construction of the Bagayevskiy lock - the last step in the lockage. But alas! Then Minvodkhoz began to follow its own departmental interests. Meanwhile, the construction of the Bagayevskiy lock is an urgent, national economic necessity which should be carried out in the years 1986-1990.

The absence of the Bagayevskiy lock rules out the possibility of operating the large-tonnage fleet of the Volga-Don Shipping Company, including its hauling exports and imports, in ships for mixed, river-and-sea, navigation, and also in communications with the Central and North-West basins. To provide the guaranteed shipping depth of four meters below the Konstantinovskiy lock requires a water transport drawdown in the amount of 400 cubic meters per second, and a radical reconstruction of the Kochetovskiy lock with a cost of 54 million rubles and also carrying out deepening dredging work with a volume of almost 13 million cubic meters and capital expenditures of 44 million rubles and operational expenditures of above 3 million rubles.

Transportation of national economic cargoes in the section of the Bagayevskiy lock at the 1990 level will constitute 36 percent of the total haulage of the Volga-Don Shipping Company, 40 percent in the communications with the Central and North-West basins, and 11 percent in haulage of exports and imports. The annual saving of national economic outlays in hauling cargoes by river transport having a cost of cargo turnover twofold less than hauling by rail, will amount to several million rubles. In so doing, the operation of railroad transport (which is already stressful) is made easier.

Construction of the Bagayevskiy lock, by comparison with current conditions will reduce the annual expenditures I presented above by 6 million rubles. It eliminates the necessity of a radical reconstruction of the Kochetovskiy lock with the expenditures of 54 million rubles, and it reduces the required drawdown of transport water from 400 to 170 cubic meters per second; that is, by 230 cubic meters per second or 4.8 [sic, 4.8 billion intended?] cubic meters per year.

With the entry into operation of the Bagayevskiy lock on the Lower Don, the development of the Unified Deepwater System of the European USSR is completed. The system has high technical and economic indicators. Therefore, in the sixth section of the proposal for the Basic Directions, after the words: "BY CONSTRUCTION OF THE DNEPROVSK-BUGSKIY LOCK AND THE FIRST STAGE OF THE DANUBE-DNIEPER CANAL", it is necessary to write: "CONSIDER THE BAGAYEVSKIY LOCK AS THE FIRST PRIORITY FACILITY OF TRANSPORTATION AND WATER CONSERVATION CONSTRUCTION".

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MARITIME AND RIVER FLEETS

LATVIAN RIVER FLEET OPERATIONS REVIEWED

Moscow VODNYI TRANSPORT in Russian 6 Feb 86 p 2

[Article by VODNYI TRANSPORT staff correspondent V. Lushchevskiy: "A Time of Great Changes"; capitalized passage published in boldface]

[Text] It has been a year since a radical change in the organization of a major transport element took place in the republic, and the Latvian SSR Council of Ministers Main Administration of the River Fleet was created. Volumes of the shipping on rivers and lakes had increased by many orders of magnitude during the years of the 10th and 11th 5-Year Plans, the levels of freight turnover at ports and landings had increased, and the navigation geography of the ships had expanded. River transport workers had entered Baltic Sea coastal maritime fairways and begun to deliver cargoes from the traditionally maritime ports of Vyborg, Tallinn, Ventspils, and Kaliningrad.

Shipments in mixed river-sea navigation had greatly increased the potential of this form of transport, which had become cramped in its former administrative framework. The formation of the Glavrechflot [Main Administration of the River Fleet] of the republic's Council of Ministers removed the obstacles, and increased the potentials and rights of the river establishment.

The changes which took place in the organization of river transport administration have had a favorable effect upon many aspects of its activity. Key problems in the development of shipping and technical re-equipping of the fleet have begun to be solved more realistically, there has begun to be more order in the use of resources, and painful problems in the social sphere are being resolved more successfully.

The overall result of the improvement in style of administration is apparent in greatest relief in the fact that the Latvian Glavrechflot's collective has fulfilled the 11th 5-Year Plan quota ahead of schedule, and is continuing the implementation of its plans in all areas of scientific and technical progress.

River transport workers have evidenced a taste for the new and a readiness to follow an unbeaten path by mastering a regular Vyborg-Riga cargo line. Motor ships are delivering granite rubble for the republic's construction projects. The need for it is great, and, in this case, the initiative of the water transport workers has helped solve one of the problems, acute for Latvia, of providing construction sites with the materials they need.

Let us note in this regard that, in order to carry out what was planned, the Latvian Glavrechflot had to be augmented with ships having the right of navigation in the coastal maritime mode. Several Tissa-class motor ships, written off in the Latvian Maritime Shipping Company, but having extended their operating lives in the make-up of the republic's river flotilla, also are used for this purpose.

It is well to emphasize that maritime ships of "retirement" age, having fallen into the hands of good managers, provide for high shipping efficiency in mixed navigation. A ton of building materials delivered by them turns out to be far less expensive than if transported by railroad.

The workers of the Latvian Glavrechflot also may list the solution of a number of serious problems in the capital construction area among their assets. On the left bank of the Daugava River (in the Voleri area) in Riga, a new freight district, an offspring of the 11th 5-Year Plan, is in operation. It is expected to handle up to a million metric tons of construction materials--river transport's basic cargo--in the course of a year. A similar district also has been built on Zvirgzdu Island. From here, construction materials now are delivered by the shortest routes to sites located on the Daugava's opposite bank.

Inasmuch as passenger transport holds a major position in the work of river transport workers, the new Main Administration of the River Fleet also has had to become engaged in earnest in constructing safer and more convenient landings where the motor ships of excursion and outing lines moor. Such landings have been put into operation in (Kengararse), (Vetsmilgravise), and (Mezha-parke). In all, 15 passenger landings have been built during the past 2 years.

During the last 5-year plan, a total of about 13 million capital investment rubles was acquired. Of the number of the largest construction projects, from which the collective already is receiving an appreciable return, let us name just two more: the Latvian SSR Main Administration of the River Fleet's new ship repair plant on the Daugava, and the first stage of the Riga River Port.

The high intensiveness levels, toward which the river transport workers collective is striving, are not easy for it to attain using antiquated loading excavators and bulldozers that have reached an age of 15-20 years. In this instance, it is not fitting to speak of technical progress--the old, seldom reliable equipment is impeding the offloading of construction materials onto motor transport.

In addressing the problems looming before Latvia's river transport in the new 5-year plan, one must not fail to recall the lines in the draft new edition of the CPSU Program, where it is said that THE ENTIRE SYSTEM OF ADMINISTRATION MUST BE AIMED AT INCREASING THE CONTRIBUTION OF EVERY ELEMENT OF THE NATIONAL ECONOMY TO ACHIEVEMENT OF THE ULTIMATE GOAL--THE FULLEST SATISFACTION OF SOCIETY'S NEEDS AT THE LEAST COST IN ALL FORMS OF RESOURCES.

This criterion is mandatory for everyone today.

MARITIME AND RIVER FLEETS

FEATURES OF NEW ZHIGULI-CLASS RIVER-SEA CARGO SHIPS

Moscow KRASNAYA ZVEZDA in Russian 11 Jan 86 p 2

[Article by KRASNAYA ZVEZDA correspondent V. Khurstov: "On the Ways--'Zhiguli'"; first three paragraphs are KRASNAYA ZVEZDA introduction; first paragraph is a boxed item]

[Text] [Boxed item: "Develop shipping...on mixed navigation ships of the 'river-sea' type." (From the draft of Basic Directions of USSR Economic and Social Development for the Years 1986-1990 and the Period to the Year 2000.)]

Now, when nationwide discussion of pre-Congress documents is taking place, and socialist obligations for the 12th 5-Year Plan are being accepted in worker collectives, the foundation is being laid for successful work in the future.

This preparation is being carried on at full speed at one of the oldest enterprises in the country--the Krasnoye Sormovo Plant imeni A.A. Zhdanov. In 1985, the Gorkiy shipbuilders laid the keel of the lead ship of the new Zhiguli class. These dry cargo ships soon will be in operation for the 5-year plan.

Sormovskiy-class motor ships have been operating successfully for many years on our largest rivers. However, they no longer fully satisfy river transport workers today--the demands for comfort in living and working spaces, and for automation and mechanization in the production processes have increased.

In creating a new dry cargo ship, Krasnoye Sormovo workers encountered many difficulties. And the main one was increasing the ship's cargo capacity and thereby providing for the growth of cargo carriages in river transport. In addition, it also was necessary to take many other desires of river transport workers into account--increasing hull ice protection (this will prolong shipping seasons), doubling the underway automation, and reducing ship ballasting time.

In result of the reworking of several versions, a design was born, which received the name "Zhiguli." This dry cargo ship is intended for transporting various granular cargoes (including grain), as well as international standard containers, lumber, and other materials, on the country's inland waterways (with passage through the Volga-Baltic and Volga-Don Canals) and seas washing the Soviet Union's shores, and also on the North Sea, the Mediterranean Sea,

and others; with limitations, of course, in keeping with the ship's class.

In river-sea voyages, the new motor ship can take on 4,000 tons of cargo--more by 1,000 tons than her predecessor, the Sormovskiy--and in maritime voyaging, 5,500 tons.

Zhiguli is a highly mechanized ship. Most of her auxiliary mechanisms operate in an automatic mode. Remote control is used extensively. A special stopped and low-speed maneuvering system [podrulivayushcheye ustroystvo], which permits maneuvering with assurance in difficult circumstances, is located in the bow section.

In contrast to the Sormovskiy, the Zhiguli's longitudinal cargo bulkheads are vertical. This facilitates loading and unloading operations. Moreover, these may be conducted simultaneously in all four hatches.

Comfortable conditions have been created for the crew's off-duty time also: On the new motor ship there are single [one-person] staterooms only, equipped with sanitary facilities including a shower, there is a dining room and a reading and recreation room, a sauna bath, an athletics room, and a television system. There is an air-conditioning system in all living and working spaces.

"In developing the design for the Zhiguli-class ships," related the plant's Chief Designer, USSR State Prize Laureate A. Zhivotovskiy, "we made a maximum effort to take into account the latest achievements of science and technology, and, of course, the rich experience of our specialists in designing mixed navigation 'river-sea' ships. Specifically, in creating a mathematical model of the ship's theoretical design, a system of projection automation was used. Now the EVM [computer] also is being used extensively for putting out inventory-planning documentation."

The ship is being built by progressive technology, with the use of large-block [modular] construction and maximum concentration of hull construction in assembly shops. The final operation--joining the blocks [modules]--will be carried out on the open ways.

It is planned to conduct dockside and delivery trials of the ships of the class using simulation devices.

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MARITIME AND RIVER FLEETS

1ST SECRETARY ON TATAR ASSR RIVER TRANSPORT PROBLEMS

Moscow VODNYI TRANSPORT in Russian 15 Feb 86 pp 1-2

[Article by G. Usmanov, first secretary of the CPSU Tatar Oblast Committee, under the "Pre-Congress Forum" rubric: "On Volga Banks"]

[Excerpts] Two mighty rivers meet in the ancient land of Soviet Tatars [Tatars]--the Volga and its largest tributary, the Kama. The cities and towns of one of the country's largest autonomous republics have spread freely on the banks of these deep-water highways.

What kinds of resources do the workers of Tatars' water transport center have? As of today, the republic's river transport workers have modern cargo motor ships and tugs at their disposal. A flotilla of 17 floating, high-production gravel extracting rigs is working on the Kama and Belaya Rivers. In Kazan, Chistopol, Sokolki, and other ports, many berths are mechanized, and provided with powerful gantry and floating cranes, and other cargo-transfer equipment. In the Kazan port, there are over 50 passenger vessels, of which 3/10 are Raketas and Meteors [Raketa- and Meteor-class hydrofoils].... Five ferry crossings operate continuously on the rivers. During the shipping season, this entire fleet transports up to 4 million passengers. In the last 5-year plan, the republic's water transport was augmented with new vessels and cargo-transfer equipment. Specifically, three more high-speed vessels, a Volga-class catamaran for tourists, and three Moskva-class motor ships for local lines appeared in the Kazan roadstead. The tug, Volgar, three raft-towing tugs, two Okskiy-class cargo motor ships, and several non-self-propelled barges also were received.

The bulk of the fleet and shore equipment is concentrated in the Kazan port. The leading position among Tatar ASSR river transport enterprises belongs to it. The port of the republic's capital is one of the largest on the Volga. It is the strong, connecting transport link on the Middle Volga in the shipping of national economy cargoes for the Tatar, Chuvash, and Mari Autonomous Republics, and Kirov and other Oblasts. To its lot falls over 80 percent of the volumes of cargo and passenger carriages being effected in our republic.

Kazan port personnel worked rather well during the last 5-year plan. Creatively solving state problems, the collective successfully carried out the planned 5-year task and its socialist obligations, according to all the major

indices. Specifically, overall growth in the shipping of cargoes, in tons, amounted to 21.2 percent. Their processing increased by 15.6 percent. Coal, grain, building materials, timber, and other important cargoes were delivered to the consumers in full measure. In the final year of the 5-year plan, productivity increased 17.5 percent in the cargo fleet by comparison with the preceding year. The standing time of motor ships for processing and the processing time of railroad cars in port were reduced substantially.

Serious shortcomings in the activity of river transport workers, in particular, cannot but worry us. The workers of the Kazan port did not fulfill the 5-year plan in passenger transporting. The work of the Sokolki port's collective has been in an alarming state for many years. There is an especially alarming situation in Chistopol. The river transport workers at this location have not fulfilled planned quotas for over 10 years in a row now. Some fleet crews are not fulfilling plans.

Analysis of the laggards' activity shows that they are inclined, as before, to look elsewhere for the causes of erratic work. They allude to caprices of the weather, interruptions in material and technical supply, and other reasons, instead of energetically mobilizing the collective's efforts for solving the key production problems and making better use of existing potentials. But, really, the causes of the poor performance are obvious. They are--an atmosphere of indifference and self-complacency, permissiveness, an insufficient level of organizing work, and poor labor discipline.

Shortcomings slowly are being eliminated in utilization of the existing fleet, organization of cargo-transfer work in ports and on docks, and ship repair operations. If only the external aspect is considered, mechanized processes seem to be coming actively into use on the docks. And the efficiency experts also have been working rather well: During the 5-year plan, they made 1,344 recommendations, of which 1,205 were introduced into production with an economic impact of 692,000 rubles. However, in both the ports and the fleet, the proportion of manual labor, as before, remains great, and it was reduced insignificantly during the 11th 5-Year Plan. Matters are unsatisfactory in this regard in repair and warehouse operations, unloading boxcars, and scraping out [zachistka] gondola cars. Here, over 30 percent of the workers are engaged in manual labor. Meanwhile, the problem of reducing the proportion of manual labor to half as much by the year 2000 is posed in the draft new edition of the CPSU Program. This is an extremely complicated problem. In order to solve it successfully, river transport workers, just like other transport workers, must engage in production mechanization comprehensively, precisely and consistently adhering to the entire technological chain.

For these and other serious derelictions, as well as the poor utilization of internal reserves, severe complaints have been lodged with the directors of the ports and their subdivisions. Right now the task is, without delay, to arrange for uninterrupted delivery of cargoes, increase the handling capacity of docks, make up for dereliction as soon as possible, and complete the 12th 5-Year Plan's first year task upon the beginning of the new shipping season on the rivers.

River transport workers' shipping volumes are growing. For example, port workers of the republic's capital will ship from their docks, in the current year alone, over 34 million metric tons of cargoes, which is substantially more than last year's volume. The rates of growth in shipping volumes will increase primarily because of intensive factors. Transport, like the other sectors of the production infrastructure, must match, and maybe even surpass, the dynamic development of the republic's national economy. For this, however, it is necessary to solve a number of important problems.

The difficulties arising in the Kama Cargo Region constitute one of these pressing problems. Geographically the region is located in the Kama and Belaya basins, rich in gravel and a sand and gravel mixture. The valuable mineral raw material has been extracted here for over 3 decades now. It is delivered by waterways from here to many of the country's centers for new construction projects, and this raw material also serves for reinforced concrete preparation.

Recently, with the arrival here of new gravel-extraction equipment, the removal of sand and gravel mixture from the region has grown immeasurably. Kazan port workers, for example, take 18-20 million metric tons of these materials out of here annually. In addition to the Kazan workers, rigs [mekhanizmy] of the Kama and Belaya River Shipping Companies and dozens of local riverside construction organizations located on Tatar, Bashkir, and Udmurt ASSR territory operate in the local quarries.

Naturally, extraction so intensive, and the destruction of an age-old environment, have encountered strong objections, and from fishery protection agencies first of all. And this is understandable, for the Kama is a unique reservoir, and many valuable fishes occur in it. Fishery protection workers believe that the feeding base for fishes is being destroyed in the areas being mined by river transport workers. And, under these conditions, the Srednevolzhrybvod [Middle Volga Fishing Waters] Administration of the USSR Minrybkhhoz [Ministry of the Fish Industry] began to prohibit the mining, first in one and then in another sector of the Kuybyshev and Lower Kama Reservoirs. Thus, the interests of departments have clashed.

And, in the meantime, the national economy's requirements for mineral construction materials are increasing. For example, mining tasks and volumes significantly exceeding the present level--22 million metric tons--have been set in the current year for the Kazan port workers. Thus, on the one hand--prohibitions, and on the other--an increase in mining.

What is the way out? It is thought that the RSFSR Gosplan [State Planning Committee] has the deciding word here. The problem must be solved at the State level, wisely, profoundly, scientifically, comprehensively, and still in the planning stage, taking into account the interests of all the parties--the RSFSR Gossnab [State Committee for Material and Technical Supply] and Minrechflot [Ministry of the River Fleet], and the USSR Ministry of the Fish Industry. And, of course, with the necessary consideration of all environmental features of the Tatar ASSR.

All factors arising in this controversial process must be examined in close interrelationship and organic unity, with support, on the part of departments conducting the mining of the quarries, by serious, compensatory fishery protection measures. Scientific elements and the geological survey and ecological services should take a more active position in this matter.

River transport workers have many complaints about the docks of cargo owners. Most of them do not meet modern requirements in their parameters, and are poorly fitted out with equipment. The Volga docks in Kazan for receiving cement and salt, which belong to the Minpromstroy [Ministry of Industrial Construction] and the USSR Gosstnab, have become dilapidated. Moreover, the salt dock is in hazardous condition for the third year now. Large-tonnage ships cannot come alongside it, and are compelled to effect unloading by floating crane.

In the last 5-year plan, the former RSFSR Ministry of Agriculture was supposed to build docks in five places for receiving mineral and chemical fertilizers. However, in only one of them-- Murzikh --was the construction begun. The RSFSR Ministry of Khleboprodukty [Grain Products] dock facilities are being developed extremely slowly on the republic's territory--in Chistopol, Pechishchi, Tetyushi, Bolgary, and Krasnovidovo.

The problem's acuteness lies in the fact that the volume of cargo processing on departmental docks amounts to about 25 percent [of the total], and yet the intensiveness of loading-unloading work on them is lower by half to two-thirds than on port docks. It is clear that huge unutilized reserves reside in the solution of this long-standing problem.

The development of port facilities, and their further mechanization and fitting out with cargo-transfer equipment deserve special comment. River transport workers of the republic's capital, for several years now, have been posing questions to the Volga United River Shipping Company and the Ministry of the River Fleet about constructing a vertical mooring wall [quay wall] (300 running meters) in the vicinity of "Otkosa," and reconstructing the passenger transit dock in Kazan. But so far, unfortunately, everything has been reduced to conversations, and promises not followed by definitive actions. And another thing--right now a substantial part of the building sand for municipal construction projects is being transferred by obsolete, unproductive floating cranes. There is a shortage of non-self-propelled barges and scraping-out [zachistnaya] and other equipment. The port now needs four or five modern floating cranes of 16-metric-ton lifting capacity and six or seven new-construction barges as replacements at the earliest possible time.

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MARITIME AND RIVER FLEETS

1ST SECRETARY ON DNEPROPETROVSK OBLAST RIVER TRANSPORT

Moscow VODNIY TRANSPORT in Russian 18 Feb 86 pp 1-2

[Article by V. Boyko, first secretary of the Dnepropetrovsk Oblast Committee of the Ukrainian Communist Party, under the "Pre-Congress Forum" rubric: "The 'Transport' Program--in Action"]

[Excerpts] Dnepropetrovsk Oblast is located in the southeastern part of the Ukraine, in the basin of the Dnieper River's middle and lower course. Today it is a major production-area complex, with highly developed heavy industry and intensive agriculture. The country obtains 42 percent of its iron ore and about three-fourths of its manganese ore from the oblast, every sixth ton of its pig iron, and every seventh ton of its steel and rolled metal. Products of ferrous metallurgy, machine building and metal machining predominate in the overall volume of industrial production. Products of branches of the food, chemical and petrochemical, and light industries constitute a substantial percentage.

The problems being solved in our oblast are complicated and varied. The nature of the economy, the long list of products being put out, and the characteristics of the industries connected with the mining and processing of minerals demand the efficient operation of a transport system [konveyer], in which water transport has an important place.

Three ports, fifty-eight berths and moorages, a fleet repair base, a waterway maintenance unit, and a communication and radionavigation enterprise support the transporting of national economy cargoes and passengers. Modern motor ships have linked the Dnepropetrovsk Administrative Area to the riverside regions of Kherson, Zaporozhye, Poltava, Kirovograd, Cherkassy, and Kiev Oblasts.

In 1985, more than 21 million metric tons of cargo, constituting 22 percent of the entire processing volume in the Dnieper Basin, were processed in the oblast's ports. Over 3 million persons were transported by the passenger fleet.

Coal, metal, grain, mineral construction material cargoes, equipment, containers, packaged-item cargoes, and other cargoes are transferred on the docks. River transport workers deliver non-ore materials (sand, crushed stone, slag) from

riverside quarries to oblast enterprises and construction organizations. The shipping volume of these cargoes has reached 25 percent of all local shipping by the republic's Glavrechflot [Main Administration of the River Fleet].

Delivery of food cargoes by river ships, with reloading onto the railroad in the Dnepropetrovsk port, has been established since 1982. The overall volume of grain handling alone was 524,000 metric tons during the 5-year plan.

At the mouth of the Samara River, a highly productive fixed facility for the hydraulic unloading of sand from barges was installed and brought up to designed capacity in the course of 2 months on the dock of a wall materials plant. Now, over a million metric tons of building materials are delivered to the plant annually by the water method. In result, river transport workers have been freed for transporting a thousand railroad cars of other cargoes.

The advanced experience of Leningrad and Odessa transport workers, introduced as applicable to local conditions, has improved the coordination of mixed forms of transport. River, rail, and motor transport workers operate by a common [uniform] technological process in handling railroad cars, ships, and trucks. Consequently, the standing time of transport means in loading-unloading operations constantly decreases. In 1985 alone, the norm for processing ships was reduced by 14 percent, and that for railroad cars by 11.4 percent. Over 7,000 railroad cars were freed for additional loading.

The problems of improving shipping technology and expediting the processing of transport means have become the primary ones in the work of efficiency experts of the fleet base and ports, who are regular participants in the VDNKh SSSR [Exhibition of USSR National Economic Achievements], and have received high marks repeatedly from the exhibition's main committee.

The system for high-speed loading of granular cargoes into railroad cars and trucks, developed by Dnepropetrovsk port engineers in creative cooperation with scientists of our metallurgical institute and specialists of the Dnieper Railroad, deserves special attention. The fundamentally new technology for high-speed car processing was introduced in the course of several months. Now, one gondola car is loaded in 2-3 minutes, and a truck in 20-30 seconds. Productivity has increased eightfold by comparison with the conventional loading plan existing in the country's river and maritime ports.

However, there are many unutilized reserves in the work of river transport personnel.

First of all, river transport is not fully utilized for carrying the cargoes suitable to it. Removal of granite products for the oblast's needs is effected primarily by motor transport from the Dnieper quarries: Chaplino, Taromskoye, (Kaydaskiy), (Lyubimovskiy), and others. And only 900,000 metric tons (about 15 percent) is transported by river. It would be advisable to organize the transporting of crushed stone and sand to depot [bazovyye] docks by large-capacity barges, with a subsequent dump truck connection for delivery to the

rural construction projects in a number of the oblast's rayons. For example, cargoes for a group of levee [balovskiye] enterprises and adjacent kolkhozes [collective farms] could be accepted on a depot dock upstream from the village of Obukhovka. Such a shipping plan would permit reducing fuel expenditures, freeing hundreds of trucks for other jobs, and reducing traffic on oblast center roads. The Ukrechstroy [Ukrainian River Construction] Firm, subordinate to the Ukrainian SSR Main Administration of the River Fleet, can carry out the construction of two or three depot docks with the shared participation of interested ministries.

The system for high-speed loading of railroad cars with granular freight was mentioned above. The VDNKh SSSR first-place certificate defined the new technology as an achievement of scientific and technical progress. However, the system's capacity is being utilized at only 50 percent, since the railroad station's handling capacity has fallen behind that of the mechanized docks. It is necessary to accelerate the station's reconstruction according to the design developed by the institute "Dneprogiprotrans" ["Dnieper Planning and Survey Institute of the Ministry of Transport Construction"].

Port workers are permitting above-norm standing of railroad cars and trucks in handling metal, containers, and food cargoes. The primary cause--extremely limited confines of the cargo docks. Insufficient water depths and limited handling capacity are holding back the transporting of Dnieper Basin industrial enterprises' products to ports of the Black and Mediterranean Seas and the Danube Basin by ships of the river-sea type. True, the Glavrechflot has begun transporting steel ingots from the Dnieper Metallurgical Combine imeni Dzerzhinskiy to Bulgaria, but in very small volumes. The bulk of the export products of metallurgical and other plants is delivered by railroad, with transshipment in maritime ports. The need has become inescapable to move the general cargo docks to a new location having a system of deep-water approaches according to the plan developed last year by the institute "Ukrgiprorechtrans" ["Ukrainian State Institute for Planning in River Transport"]. Communists A.A. Anisimov, cargo region chief; I.I. Mishagin, port workers brigade team leader; and many others spoke concernedly about this at a meeting for discussion of the draft of Basic Directions of USSR Economic and Social Development for the Years 1986-1990 and the Period to the Year 2000. We consider it timely, as early as in the current 5-year plan, to call for the allocation of funds for constructing docks for the receiving of river-sea-type ships and lighters and the processing on them of large-capacity containers, metal, and packaged-unit cargoes.

The transporting of iron-ore raw material for metallurgical plants from ore-dressing combines by large-capacity river ships, which would permit the release of railroad cars for additional loading, seems reasonable and efficient.

River transport workers also have other problems. Poor technical outfitting of individual technological processes, unfitness of equipment for further operation, and inadequate vocational training of young workers were established by the certification of work places conducted. An underproductive cargo loader

[peregruzhatel] requires replacement. The lack of ship-lifting means in the ports leads to prolonged stays of ships under repair, and to reduction of their carrying capacity. Also, it is necessary to strengthen the material base of the Dnepropetrovsk Training Course Combine, which trains ship-handling personnel, equipment operators, and repair workers. These important matters were considered during discussion of the party's pre-Congress documents, and must be resolved as soon as possible in the collectives of transport enterprises and the Ukrainian SSR Glavrechflot.

In our view, for more efficient utilization of the transport fleet and cargo-transfer equipment, and for improvement of the cargo-transshipment process, a unified water transport enterprise should be established in the oblast, uniting the Dnepropetrovsk, Dneprodzerzhinsk and Nikopol river ports.

The questions raised are not new, and resolving them will permit increasing the volumes of cargo carriages on the Dnieper, and improving the utilization of all transport means. We believe that development of the modern river transport sector of the national economy requires further acceleration in the interests of fuller satisfaction of the national economy in shipping and increasing the quality and standard of service to the population.

In the 12th 5-Year Plan, the oblast's river transport workers are faced with putting a new river terminal with passenger landings into operation, becoming familiar with the new transport ships and highly productive loading-unloading equipment, providing growing local transport of mineral building materials for the oblast's enterprises and construction sites, and doubling the volumes of export-import cargo processing.

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MARITIME AND RIVER FLEETS

1ST SECRETARY ON KHERSON OBLAST RIVER TRANSPORT PROBLEMS

Moscow VODNYI TRANSPORT in Russian 20 Feb 86 pp 1-2

[Article by A. Girenko, first secretary of the Kherson Oblast Committee of the Ukrainian Communist Party, under the "Pre-Congress Forum" rubric: "Formula for Acceleration"]

[Excerpts] However, the fundamental significance of the Dnieper resides in the fact that it is the Republic's largest transport artery and empties into the Black Sea on oblast territory, which imparts a special character to Kherson as a major transport center, uniting maritime, river, rail and motor transport. Over half of all the cargoes being handled is delivered to the consumers by water through the Kherson river and maritime ports. The results of work in the 11th 5-Year Plan attest to the fact that the water transport workers can solve difficult and important problems in providing shipping for the oblast's developing industry and agriculture. More than 20 million metric tons of cargoes were transported by them during the 5-year period.

The Kherson Transport Center also has other means at its disposal for providing the national economy with shipping. We have two large railroad stations, an interindustry industrial rail transport enterprise, a well-ordered motor transport system, air transport is available, and more than 20 ships of the river-sea type, attributable to the Shipbuilding and Ship Repair Plant imeni Komintern, are being operated successfully.

Reducing the processing time of transport means undergoing cargo operations has become an object of special concern to the party's obkom [oblast committee]. Implementation in the oblast of the CPSU Central Committee's decree "On the labor cooperation of seaman, railroader, trucker and river transport worker collectives in the Leningrad Transport Center" has furthered this. At the beginning of the 11th 5-Year Plan, for purposes of expediting the delivery of cargoes to consignees and increasing the efficiency of the transport process, the maritime and river ports, the Kherson Department of the Odessa Railroad, the Kherson-Port Railroad Station, the dispatcher unit of the Ukrainian Main Administration of the River Fleet, the grain products combine, the Kherson Office of the V/o [All-Union Association] "Soyuzvneshtans" ["All-Union Association for Transport Abroad"], and the oblavtupravleniye [oblast motor transport administration] organized their work on the basis of an agreed, continuous plan and schedule of transport center work, which was an important

organizational element of scientific and technical progress. In 1985, 1,286 transport ships were processed by the maritime port jointly with enterprises included in the transport center, with an overall saving of 5,384 ship-hours. During the 11th 5-Year Plan, over 2,300 railroad cars were freed for additional loading. This became possible also because of well-organized socialist competition, and the introduction of the port workers' slogan, "Fighting party group--leading collective." The competition was tuned up even among unified shifts of port and Kherson-Port Station operational workers.

In the oblast's water transport, great attention is devoted to cargo packaging, especially on the Kherson-Burgas International Line, with its traditional cargo traffic in canned goods from the People's Republic of Bulgaria. A set of measures was developed, which has permitted increasing the line's efficiency. Three ships, specializing in transporting packaged cargo, have been re-equipped, an exchange stock of universal pallets has been established, and a uniform transport technology process for the loading, maritime carriage, and unloading of canned goods has been worked out and agreed upon.

All of this made it possible in 1985 to increase cargo turnover in the handling of canned goods 2.5-fold by comparison with 1980. The percentage of packaged shipments grew from 18 to 81 percent, and voyage turn-around time was cut in half. The port workers and seamen of the two brother countries see further improvement of the Burgas-Kherson Line's operation in the introduction into transport production of the achievements of scientific and technical progress, in the development of packaged shipments and the use of one-time and multiple-use packaging means first of all, with gradual transition to the most progressive technology for shipping and transshipping from door to door. The solution of many problems is connected, to a large extent, with international socialist competition. Such competition, between ships' crews, port collectives, and longshoremen's teams of Burgas and Kherson, is developing and growing stronger, and the exchange of delegations sharing their experience in the achievements of scientific and technical progress is conducted. V. Tokalenko, leader of an enlarged, composite team of longshoremen and equipment operators, has become one of the first laureates of the "Outstanding Worker of International Socialist Competition" insignia.

In 1986, with the arrival in her port of registry of the Kherson motor ship of mixed river-sea navigation, the V. Chubar, a new stage began in the development of shipping. Hundreds of thousands of tons of cargoes, heretofore requiring multiple handling on various forms of transport, are shipped between ports of the Dnieper, Southern Bug, Dniester, and Danube Rivers and the maritime ports of Bulgaria, Romania, Yugoslavia, Italy, Greece, and other States. River transport workers and seamen jointly have begun to master modern transport technology systems for carrying cargoes in large-capacity containers and lighters. These carriages are shifting from experimental to regular, and they will be given "the green light" in the 12th 5-Year Plan.

It is well known that increase in the reliability of the entire complex of technical equipment, with the mechanization and automation of heavy and labor-intensive operations, and extensive use of computer technology are the determining directions of intensification for transport.

Just as in the entire national economy, the attainment of all these goals in water transport requires the acceleration of scientific and technical progress and, first of all, extensive and effective introduction of the latest equipment and technology and advanced methods of labor organization and production.

New types of diesel loaders and improved cargo-hoisting equipment have found broad application in the maritime port. "Nairi"-type electronic computers are used for calculating the salaries of workers, inventorying material resources, and other purposes.

Development of a network of truck stations, which will permit reducing empty truck runs and saving fuel and lubricants, is continuing.

The oblast's transport continues to develop. The berths of the maritime and river ports are being reconstructed. A bridge crossing, put into operation over the Dnieper, has shortened the route to regions of the Crimea and Donbass [Donets Basin], firmly connected the river's right and left banks, and linked together the oblast's production complex and the south of the Ukraine. The annual savings from its operation amount to 7 million rubles.

With the objective of extensive introduction of scientific and technical progress and improvement of shipping technology, a purposeful, integrated program, "Transport," has been developed in the oblast. The planned economic effect from its implementation amounts to 14.3 million rubles. Introduction of this program's measures will permit significantly improving the centralization of integrated transport and shipping service to consumers. It calls for the application of modern efficiency methods to shipping by forms of transport, shifting a number of cargoes from rail to motor and river transport, and reducing short-range and empty trips of motor transport. Special attention is devoted to developing loading and unloading fronts, and introducing into cargo work means of automation, new, up-to-date systems [mekhanizmy], and electronic computer technology in the processing of statistical records and planning standards information.

We have become convinced that the effect of developing transport and increasing the quality of transport service to industries depends not only upon transport itself, but also upon those elements of the national economy which use its services. The oblast party organization is directing the clientele's efforts toward fully utilizing the achievements of scientific and technical progress aimed, first of all, at increasing the intensiveness of transport-means utilization, reconstructing loading and unloading fronts, mechanizing and automating production processes, and fundamentally improving technology. An exceptionally important role in this matter has been played by the Lvov Integrated System for Efficient Use of Railroad Cars approved by the CPSU Central Committee. In carrying out measures for the development of loading and unloading fronts in the ports and at freight stations, and in improving the interaction of different forms of transport, we succeeded in ensuring definite progress in accelerating the processing time for rolling stock. By comparison with 1981, the turn-

around time of railroad cars was reduced by more than 8 hours in 1985, and the time spent in a single freight operation by 5 hours. The intensiveness of transport-means utilization was increased. The productivity of a freight car increased by 19.6 percent during the years of the 11th 5-Year Plan, the average weight of a train exceeded the norm by 200 metric tons, and, in the maritime port, about 20,000 hours of ship-standing time were saved. Specialized structures were built for unloading railroad cars and trucks. The track facilities and the mechanization of loading and unloading points of the production association "Kherson Combine Plant imeni G.I. Petrovskiy," the shipbuilding production association imeni 60th Anniversary of the Leninist Komsomol [Communist Youth League], and other enterprises received further development. Enterprises are actively engaged in repairing railroad cars and containers. In 1985 alone, 1,700 railroad cars and 530 containers were repaired by the clientele's forces.

Such work permits improving the furnishing of enterprises with loading resources. On the model of an initiative of Moscow enterprises for repairing railroad cars and containers, there arose our own slogan, "Preservation and timely processing of railroad cars--regular bringing in and taking out," which was approved by the Kherson Rail Center's partkom [party committee]. Participating in its implementation, for the time being, are the Kherson Railroad Station, the inter-industry industrial rail transport enterprise, and the glass products plant; that is, those enterprises from which a railroad car's track to a consumer begins, and at which it ends. The result was immediately forthcoming. Since the moment of inception of the initiative, the glass products plant has experienced no difficulties with the provision of railroad cars.

On the whole, we still have not reached the fundamental turning point in the matter of introducing the achievements of scientific and technical progress into transport production, and we see a good many unutilized reserves. The production potential of transport, especially water transport, requires serious renovation. The docks are slowly being reconstructed in the maritime and river ports.

The Kherson river port is the largest in the Ukraine in terms of passenger transporting. About 10 million persons are transported annually here. At the very same time, the elementary conditions for passengers are lacking at the river terminal, and the republic's Main Administration of the River Fleet is delaying construction of a new river terminal in Kherson.

We have not received proper support on the part of the USSR Ministry of the Maritime Fleet in matters of moving the docks for processing granular cargoes, mineral fertilizers first of all, outside oblast center boundaries, or of constructing a waiting base [baza otstoya] for lighter-carrying [LASH] ships either. Special attention should be focused on problems of shipping quality and the fulfilling of contractual obligations by enterprises. All is not being done to economize resources, fuel and lubricants first of all.

More might be expected from introduction of the Lvov Integrated System for efficient Utilization of Railroad Cars if it were supported by realistic material incentive measures for the saving of time in rolling stock's stay in freighting operations, railroad cars first of all. The removal of departmental obstacles would further the creation of an extradepartmental organization for freight accounting and control in the Kherson maritime trade port. There is such experience in the country, and it has proved itself; however, it has not found further dissemination.

Coordination of the work of the different forms of transport is vested in an oblast commission for transport work coordination functioning on voluntary service principles, which also does not further increasing the return on transport funds. Insufficient funds are allocated for the construction of housing for transport workers and the improvement of working and recreational conditions.

The problems of strengthening labor, production and technological discipline are not dropped from the agenda. The system of training personnel for all forms of transport, and raising their proficiency levels, requires improvement.

We consider the human factor one of the most important in the spectrum of intensification methods for transport production .

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PORTS AND TRANSSHIPMENT CENTERS

OFFICIAL ON IMPROVED TECHNOLOGY, CAPACITY OF BLACK SEA PORTS

Moscow MORSKOY FLOT in Russian No 1, Jan 86 pp 14-17

[Article by M. Khomenko, chief of the Black Sea Maritime Shipping Company Port Service, under the rubric "In Pursuit of Scientific and Technical Progress": "On the Threshold of the 5-Year Plan"]

[Excerpts] By the beginning of the 11th 5-Year Plan, the disproportion which had previously developed between the carrying capacity of the fleet and the handling capabilities of the ports had clearly manifested itself in our shipping company. This disproportion did not permit accelerating the processing of ships and, thereby, also increasing the volumes of shipping.

During the years of the 11th 5-Year Plan, the technical re-equipping and reconstruction of many transshipment complexes engaged, first of all, in transshipping food cargoes as well as cargoes being transported by means of progressive transport technology systems--container, RO-RO, ferry--were carried out in Black Sea Maritime Shipping Company ports. This has permitted increasing the handling capacities of ports by 25 percent, and reducing the labor-intensiveness of transshipping by 17 percent. Reconstruction and technical re-equipping have touched literally all of the shipping company's ports--in each of them, taking specialization and operating features into account, a good many engineering solutions have been effected, which increase handling capacities and further the growth of efficiency in using the transshipment complexes and transport means.

In the Odessa Port, reconstruction and technical re-equipping of the grain transshipment complex on the seventh dock [wharf, quay or pier] and the port's elevator have been carried out, with appropriate development of the railroad track facilities and installation of highly productive gantry pneumatic grain loaders. This has permitted doubling the daily railroad car turnover of these complexes. The reconstruction of two docks, with the formation in their rear of extensive areas for parking motor-vehicle equipment and containers, has been completed. Since the reconstruction, these deep-water docks, previously used to a limited extent, are accepting large-tonnage ships for processing: container ships and RO-RO's.

Spreading out large-tonnage, specialized ships over several ports has permitted reducing their unproductive standing while awaiting docks by more than 10 per-

cent. In the Odessa and Ilichevsk Ports, highly productive floating grain loaders have been placed in operation, which has increased the intensiveness of loading grain into lighterage vessels, and provided a more even workload for the grain transshipment complexes of shallow-water ports: Nikolayev, Kherson, Belgorod-Dnestrovskiy, Feodosiya, and others. Grain dock transshipment complexes in the Ilichevsk and Belgorod-Dnestrovskiy Ports have been equipped by the necessary railroad track development, and the construction of railroad scales.

In connection with the growth of containerized shipping in the Black Sea Maritime Shipping Company, much attention has been devoted to improving the specialized fleet's processing. Thus, the second increment of the container terminal, which has increased 1.5-fold the capacity of the storage areas for receiving containers from transport means, has been put into operation in the Ilichevsk Port. For purposes of spreading out the increasing volumes of containers for their processing, the Odessa and Nikolayev Ports, where specialized container districts have been equipped, have been tied together.

The creation in the Ilichevsk Port of specialized truck fleets [avtokolonny] of container-carrier trucks purchased abroad is furthering the development of containerized shipping. Carriages of containers in intercity transportation have been taken over on this basis, which, to a certain extent, has furthered an increase in the handling capacities of the container terminal, and the freeing of railroad rolling stock for other carriages.

During the years of the 11th 5-Year Plan, the Black Sea Maritime Shipping Company's ports were augmented substantially with modern cargo-transfer and other equipment, including gantry cranes, loader trucks of domestic and foreign manufacture, mobile derrick cranes, tractor trucks and trailers, railroad car loading machines, bucket loaders, maneuvering pushers for railroad cars, etc. Introduction of this equipment has lowered the proportion of manual labor, increased the comprehensive mechanization level of cargo transshipment, and intensified the processing of transport means.

The first increment of a new coal and ore complex in Port Yuzhnyy went into operation at the end of the 11th 5-Year Plan. In the process of mastering the complex's designed capacities, the need for a certain amount of universalization became apparent. At first, for purposes of filling in technological gaps produced by the irregular arrival and shipment of export bulk cargoes, the decision was made--organize the transshipment of import cargoes on the docks: metal, pipes, ore, and others.

This permits more fully tasking the new capacities, and more efficiently utilizing labor resources. Under the circumstances of a certain overloading of the shipping company's ports with import cargoes, putting the new Port Yuzhnyy Transshipment Complex into operation will have a substantial effect upon acceleration of fleet processing.

An integral part of increasing production's technical level in the ports is further improving the technology of loading-unloading operations. Among new technological solutions, the loading of refrigerator railroad cars with meat carcasses using loader trucks and special grabs deserves attention. In Odessa and Kherson, the longshoremen's labor has been fully comprehensively mechanized by this technology, and a potential opportunity for damage has been eliminated as a result of doing away with the manual transfer and stacking in piles of frozen carcasses. The progressive technology being followed in the shipping of urea in soft containers and in packages made of heat-shrunk plastic film is comprehensively mechanizing transshipment and reducing the standing time of transport ships under cargo operations in the Odessa Port.

In the Ilichevsk Port, a technological process for loading large-diameter pipes into gondola cars using highly productive automatic grabs has been introduced successfully. Here, too, a railroad-car-unloading, package-forming, and container-loading complex has been placed in operation. Its introduction permits intensifying the unloading of railroad cars having the most labor-intensive bagged freight. The labor conditions of port workers are substantially improved in the process. Work is being done on the transshipment of bagged freight using progressive package-forming means of one-time and multiple use.

In 1985, the lighter carrier Indira Gandhi entered the shipping company's fleet. Steps have been taken to put a lighter-carrier system into operation in the Odessa and Ilichevsk Ports.

In the course of the entire 5-year plan, the ports regularly fulfilled their annual plans and socialist obligations, steadily built up the volumes of cargo processing, and increased qualitative indices. In result, the Black Sea Maritime Shipping Company had already fulfilled the 5-year plan in cargo processing in July 1985. Up to the end of the year, over 26 million tons of cargoes will be processed above the 5-year plan. The volume of cargo processing grew by 25 percent in the 11th 5-Year Plan as compared with the 10th.

The 5-year plan for labor productivity in loading-unloading operations was fulfilled by 110 percent. Labor productivity grew by 23.8 percent during the 5-year plan. The 5-year plan for profits was fulfilled by the ports in July 1985. Before the end of the year, over 33 million rubles above the plan were received in the ports.

The introduction of new progressive equipment and advanced technology increased the comprehensive mechanization level of cargo processing, and, by the end of the 5-year plan, this had reached 97 percent. In the process, the greatest effect was achieved in the mechanization of the most labor-intensive general cargoes--growth from 84.3 to 90.2 percent. The processing indices for the fleet and transport means were improved. A substantial saving of the standing time in their processing was achieved.

For the final year of the 5-year plan, Black Sea Maritime Shipping Company port collectives had set high labor achievement goals. Because of the severe

ice situation in the first quarter of 1985, and a shortage of icebreakers and icebreaking tugs, bringing ships through, placing them at the docks, and getting them away from the docks became difficult. To some extent, the operation of lighterage vessels was paralyzed, which led to shutdowns of the shallow-water ports' grain transshipment complexes. The Nikolayev and Kherson Ports discontinued the shipping of export coal and ore destined for frozen Danube ports in mixed navigation ships. For this reason, the Skadovsk Port was inoperative during practically the entire first quarter.

The good organization and perseverance of transport center collectives were pitted against the difficult weather conditions. In every district of the ports, stations were created for monitoring and rendering assistance in the expediting of ship and railroad-car processing. In result of the steps taken, the situation gradually was normalized. Nevertheless, a lag was sustained in fulfilling the plan for cargo processing, and the qualitative indices for fleet processing worsened as compared to the past year. Strenuous work went on in the ports to make up for the lag sustained.

The ports took a large step forward in the 11th 5-Year Plan. However, it must be recognized that not all opportunities for the intensification of operational activity were utilized in full measure.

There still exist deficiencies and oversights in the work of the ports and their individual elements. Sometimes the coproducers let us down. The ports often turn into prolonged-storage warehouses, where hundreds of thousands of tons of import cargoes pile up, because of the non-provision of cars in the planned numbers by the railroad. This makes work difficult, retards fleet-processing rates, and leads to worsening in the quality of cargoes.

Despite the successes attained in increasing the technical level of production on the basis of introducing achievements of scientific and technical progress, all is not well in this respect. During recent years, much work has been done to re-equip the ports with new means of mechanizing loading-unloading operations. However, at the present time, 56 percent of the gantry cranes has an age greater than 15 years, and 27 percent greater than 20 years. The natural aging of the cranes and other equipment requires an increase, with each passing year, in the amounts of repair and restoration work. But the repair base, so far, is not growing.

On the way to intensification of the processing and servicing of ships in the ports, a port and auxiliary-service fleet shortage which has developed in the ports is becoming a greater and greater obstacle. There are not enough roadstead cutters, port tugs, bunkering vessels, and barges. To this it must be added that we have heavy losses because of protracted repair of this fleet at the SRZ [ship repair plant].

There are many other "bottlenecks" and problems on the paths to further intensification of the ports' activity. Many of them will find specific resolution as early as in the 12th 5-Year Plan. The successes achieved by the shipping

company's ports have become possible in result of the harmonious work of long-shoremen's brigades [teams], crews of portoflot [port and auxiliary-service fleet] vessels, and dispatcher, stevedoring, and warehousing shifts on the basis of extensively developed socialist competition. Many labor collectives, fittingly, are standing a pre-Congress watch. Right now, 53 brigades already are doing work applicable to the new 5-year plan.

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PORTS AND TRANSSHIPMENT CENTERS

CHIEF ON KALININGRAD PORT DEVELOPMENT, ACTIVITIES

Moscow MORSKOY FLOT in Russian No 1, Jan 86 pp 18-21

[Article by A. Mikhaylov, chief of Kaliningrad Port, under the "Our Calendar" rubric: "Kaliningrad Port is 40 Years Old"]

[Excerpts] The Kaliningrad Maritime Commercial Port is one of the most important on the Baltic Sea.

From year to year, the volume of cargoes being processed in the Kaliningrad Port has increased, and the list of cargoes has become longer. At present, the volume of processing has grown 13-fold by comparison with the initial period. Now the port has transport communications with over 100 ports in 25 countries of the world, and with many Soviet Union ports.

Conveniently and advantageously situated at the mouth of the Pregolya River, which is unfrozen year-round, the port receives ships with cargoes from the FRG [Federal Republic of Germany], Belgium, France, Cuba, African countries, Scandinavia, etc. Products of Soviet enterprises are delivered to the Kaliningrad Port, and are then shipped by maritime routes to Poland, the GDR [German Democratic Republic], Spain, Sweden, Nigeria, Cuba, Italy, and Egypt. Regular cargo lines operate between Kaliningrad and the ports of Rostock and Moa. Among import goods, raw sugar, citrus fruits, large-diameter pipes, rolled metal, paper, and chemical goods predominate. Cellulose, automotive machinery, structural steel, and equipment are shipped in export.

The port's other transport communications also are extensive. Goods are delivered from here by railroad to the KamAZ [Kama Motor Vehicle Plant] and the VAZ [Volga Motor Vehicle Plant], plants in Lithuania, Latvia, Belorussia, and the Ukraine, and new construction sites in Siberia, the North, Central Asia, and other regions of our country.

During 40 years, the port's appearance has changed beyond recognition. It received especially extensive development in the years of the 10th and 11th 5-Year Plans. In the first year after its organization, only 11 gantry cranes, design-wise and physically obsolete, with an overall lifting capacity of 38 metric tons, were in operation here.

Today the port's berths are specialized by kinds of cargoes and directions of shipping, and are equipped with modern electric gantry cranes of domestic and foreign manufacture with lifting capacities from 6 to 32 metric tons. In the cargo-transfer equipment fleet are hundreds of electric and automotive loader trucks with lifting capacities from 1 to 10 metric tons, intrahold machines of various models, pneumatic-tired cranes, tractor trucks, roll trailers [roll-treylery], and floating cranes with lifting capacities from 5 to 30 metric tons.

The port has a modern, highly-developed warehousing facility, a refrigerated warehouse, and concrete-paved areas for the open storage of goods.

An advanced technology has been developed and introduced in the port for the transfer of cellulose, automobiles and trucks, and refrigerated, bulk-food, packaged-unit, and other cargoes.

The automatic crane grab invented by V. Ryabinin, a designer of the port, for transferring large-diameter pipes has found extensive application in many ports of the country.

The growth in production capacities has permitted attracting and successfully taking over new cargo traffic in import-export goods.

The volume of cargoes being processed in packages and containers is steadily increasing.

The Kaliningrad Transport Center, which has united the port, a branch of the Baltic Railroad, the Western River Shipping Company, and the motor transport administration within its composition, has been created based upon the port.

Planning of the port's and transport center's operation as a whole is effected, using a computer [EVM], by drawing up continuous schedule plans (NPGRT [continuous schedule plan for transport] and NPGRTU [continuous schedule plan for the transport center]) in the port's information computing center.

Results of the cooperation within the transport center's framework have been--ahead of schedule fulfillment of the annual plan by the port's collective, increase in the intensiveness of fleet processing and the freeing of hundreds and thousands of railroad cars, savings in ship standing time and growth in the static loading of railroad cars, and shortening of cargo storage periods in the port.

At the present time, the Kaliningrad Port, among the first in the Ministry of the Maritime Fleet, has shifted into operation by the new organizational structure for managing loading-unloading operations, the purpose of introducing which is increase in the intensiveness of processing transport means, reduction in their unproductive standings, and growth in labor productivity.

The port workers successfully continue to maintain a labor watch in the 11th 5-Year Plan also. Since the beginning of the 5-year plan, production volume has grown by 23 percent, and 1.4 million metric tons of cargoes have been processed above plan, which has permitted supporting the growth in cargo processing without an increase in the number of workers.

Gross intensiveness of cargo operations has grown by 22 percent in comparison to the start of the 5-year plan, and railroad car turnover time has been reduced by 2 hours. Thanks to the increase in static loading, 450,000 metric tons of freight was shipped out of the port, which permitted freeing 9,000 railroad cars, and yielded 1.5 million rubles in above-plan profits.

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PORTS AND TRANSSHIPMENT CENTERS

ODESSA PORT IMPROVEMENTS INCREASE GRAIN HANDLING CAPACITY

Moscow VODNYI TRANSPORT in Russian 13 Mar 86 p 2

[Article by V. Vakuyev, director of the Odessa Laboratory of Integrated Transport Research, and O. Tomas, chief of the Chernomorniiprojekt [Black Sea Scientific Research and Planning Institute] Ports Department: "Strengthen the Cooperation of Coproducers: Create Industrial Transport Complexes"]

[Text] You would not recognize the Odessa Port Elevator Complex today. Powerful cargo-transfer equipment, a modernized weighing facility, additional railroad tracks.... All of this--the result of the recently completed reconstruction carried out with the participation of specialists from the institute "Chernomorniiprojekt" [Black Sea Scientific Research and Planning Institute], the Odessa Port, the port elevator, and the Odessa Railroad. Thanks to the technical re-equipping of shore enterprises, transshipment rates of grain--a cargo, the share of which is rather great, approximately 35-40 percent, in the overall work volume of Odessa Port workers--have increased threefold.

The 10-ton cranes have been replaced with 16-ton cranes at the complex. The width of the conveyor belt connecting the docks [wharves, quays or piers] and the elevator has been increased at rather small expense, and the increase in capacity is appreciable. One more grain-loading railroad station has been constructed, and the railroad track facilities have been thoroughly renovated. The possibility has arisen of using the sugar complex, located here, for handling grain at the off-season time, when the arrival of Cuban raw sugar is reduced. The measures taken now permit its operation regardless of any kinds of eventualities: weather, disruptions in the provision of ships and railroad cars. There are ample warehouses and roofed galleries for normal operation.

The engineer innovators were blessed with true technical ingenuity in improving the complex's weighing facility. How was it before? Railroad cars were moved onto the weighing platform, uncoupled, weighed, coupled, taken away for loading, and filled with grain. Then they were moved back onto the scales, again there was the uncoupling and coupling, and, not infrequently, it was necessary to bring them up to full load or, conversely, take off part of the grain. In general, it was a prolonged and tiresome procedure, terribly impeding the whole process.

And so, they took up the scales and installed them above the railroad cars, which permitted carrying out the freighting operation in a single step and using the apportioning bin with almost 100 percent accuracy. The elimination of reweighing means a gain of not less than 4-5 hours in the handling time for each railroad car.

The Odessa Port Elevator has its own locomotives for speedy performance of maneuvering operations with railroad cars. In addition, the fumigation (decontamination) of grain has begun to be accomplished in the process of its unloading, using a radiation unit of domestic manufacture.

What, then, has the reconstruction provided overall? The intensiveness of unloading one ship has grown from 3,500 to 9,000 metric tons of grain in a 24-hour day. During that same time, it now is possible to dispatch, not 80 as before, but 240 railroad cars of grain to various regions of the country. The acceleration achieved is equivalent to freeing two Zoya Kosmodemyanskaya-class bulk-carrier ships for additional voyages in the course of a year. And there is more. The reconstruction cost almost 3 million rubles, but the expected economic impact, counting the acceleration of cargo delivery to consignees, will exceed 13 million rubles yearly.

In essence, a major industrial transport complex, with the participation of various ministries and departments, has been created. Its well-coordinated activity should provide a significant gain to the national economy. Unfortunately, however, documentary finalization of the reconstruction's results has been dragged out because of clashes of interdepartmental interests. In the interests of business--expedite this procedure, especially since the elevator complex's technical re-equipping will be continued in the 12th 5-Year Plan. It is planned to raise the intensiveness of fleet processing to 20,000-25,000 tons of grain per 24-hour day. The number of railroad cars dispatched from here also must increase accordingly. Therefore, the complex's overall handling capacity must be increased no less than 1.5-fold. And it is planned to achieve this increase without additional labor costs.

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PORTS AND TRANSSHIPMENT CENTERS

TRANSFER OF NORTHERN SEAPORTS TO RIVER FLEET FOR EFFICIENCY

Moscow VODNYI TRANSPORT in Russian 18 Feb 86 p 3

[Article by V. Forafonov, chief of the Northern Maritime Shipping Company's Department of Ports Operation, under the rubric "The Matter Demands Resolution": "In the Optimum Mode"]

[Text] Five ports enter into the Northern Maritime Shipping Company's composition--Arkhangelsk, Amderma, Mezen, Naryan-Mar, and Onega. The latter three are situated on the lower courses of the Mezen, Pechora, and Onega Rivers, where water depths are about 4 meters in all, and, therefore, they are difficult of access for modern maritime ships, but dredging operations are impossible for various reasons.

Because of the small depths, the shipping problem is becoming more and more acute each year for maritime transport. The problem can be solved by increasing the volume of cargo deliveries from Arkhangelsk to Mezen and Naryan-Mar by shallow-draft ships of the river-sea type. These also will be able to take on certain supply goods in river ports of other oblasts of the country, in Yaroslavl and Leningrad for example, and deliver them, eliminating railroad shipments and storage in Arkhangelsk.

The Mezen Maritime Port processes about 100,000 metric tons of national economy cargoes in its roadstead during a shipping season. Of these, 45 percent is transferred into the port's barges and delivered to the river bank, and the rest is transferred into Northern Maritime Shipping Company river barges and goes to the upper reaches of the Mezen River and its tributaries. In the process, frequent fleet demurrages occur because of the lack of barges, or the provision of covered barges instead of decked, or vice versa.

During lowest waters, maritime ships cannot put in at the Mezen Port's roadstead, even in ballast, and are compelled to be unloaded in the (Bubnovskiy) Roadstead, or at Okulovo Point. During these periods, up to 30 percent of the longshoremen's working time is spent on the brigade's [team's] being taken from the shore to the ships and back. And the ships stand idle. Feeding of the longshoremen aboard the maritime ships was arranged during the last shipping season in order to reduce the demurrages. However, this does not fully solve the problem. At the same time, fully loaded Volgo-Balt-class motor ships put in at the roadstead, and thus losses of working time in the delivery of longshoremen are eliminated.

And the Sovetskiy voyn-class maritime timber carriers operating here are only 20-50 percent loaded. As a result of the incomplete utilization of their cargo capacity and the relatively high production costs of maritime ships, the expenditures for transporting 1 metric ton of cargo in them amount to 11.94 rubles, while in the Volgo-Balt ships they amount to 7.97 rubles. And, if the return loading of the Volgo-Balt ships with timber is taken into account, the expenditures will be lowered still more. Continuous operation of three Volgo-Balt-class ships from mid-May to mid-October is necessary to support the entire volume of shipping, and the freed maritime transport will provide for the exporting of about 50,000 cubic meters of export lumber, having correspondingly reduced its expensive carriages in difficult ice conditions during the fall and winter period.

The Mezen CPSU RK [Rayon Committee] already has introduced a proposal concerning the switching of cargoes from maritime ships to Volgo-Balt ships; however, it has not succeeded in solving this problem within the Arkhangelsk Transport Center's framework. Evidently, the time has come to consider the matter at the level of the USSR Central Coordination Council and Gosplan [State Planning Committee]. I consider it advisable, as well, to transfer the Mezen Port to the Northern River Shipping Company. In this case, the entire system would be in the same hands, tonnage coordination in Mezen would be facilitated, the management system would be simplified, and departmental barriers would disappear.

And the Arkhangelsk Maritime Port, in its turn, would increase the processing of cargoes for the Arctic, and also could accept additional import volumes, which would reduce the runs in ballast of timber carriers proceeding to White Sea ports for lumber.

There is a similar situation in the Naryan-Mar Port, too. Here the share of goods being delivered by maritime ships constitutes a third of the entire volume, and the remaining part is delivered by ships of the Northern and Pechora River Shipping Companies. The Onega Maritime Port does not process maritime ships at all.

During the 1985 shipping season, all three ports together handled thousands of tons of cargo, of which only 27 percent was attributable to maritime ships. Planning the operation of these ports at the level of current requirements is impossible, since the river shipping companies, because of the difference in planning system in the MMF [Ministry of the Maritime Fleet] and MRF [Ministry of the River Fleet], do not give us data on the delivery of cargoes to Northern Maritime Shipping Company ports at the prescribed times for preparing the annual and quarterly plans, even though the share of river cargoes constitutes 75 percent of the overall volume. The time has come to transfer them to the Ministry of the River Fleet, along with all of the machinery and equipment with which they are provided in sufficient quantity.

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PORTS AND TRANSSHIPMENT CENTERS

REORGANIZATION EXPERIMENT IMPROVES VYBORG PORT PERFORMANCE

Moscow VODNYI TRANSPORT in Russian 6 Mar 86 p 3

[Article by G. Veretennikov, chief of the Baltic Maritime Shipping Company's Vyborg Maritime Commercial Port, under the rubric "The Maritime Port: Management Problems": "First Test, First Results"; first two paragraphs are introductory material published in boldface]

[Text] Since 1 January 1985, the Baltic Maritime Shipping Company's Vyborg Maritime Commercial Port collective has been working, for the first time, under conditions of the districtless [bezrayonnaya] organization for managing the transshipment process.

The results, by comparison with 1984:

More cargoes by 310,000 metric tons were handled.

More ships by 31, and 1,845 more railroad cars, were worked.

Labor productivity in transshipment operations grew by 6.5 percent.

The gross and net intensiveness of fleet processing were increased, and fleet demurrage time in cargo operations was reduced substantially.

The port's collective fulfilled its quota for the 11th 5-Year Plan on 27 August, and its quota for the 1985 annual plan on 9 November.

Today it may be said without hesitation that the work during 1985 under conditions of the new, districtless organization for managing the transshipment process furthered most of the collective's successes.

It all began with the development of standard regulations for production transshipment complexes, which have replaced the obsolete and unwieldy cargo-district organization.

Three PPK's [production transshipment complexes] were formed in the Vyborg Maritime Port, the functions of which were narrowed considerably by comparison with cargo districts and became more specialized. The basic task of the PPK's is expediting the handling of maritime ships and railroad cars in the port. Therefore, all auxiliary functions have been transferred to newly established, specialized subdivisions. I have in mind the mechanization complex and the social services [sotsialno-bytovoy] and operational support complex.

The port's department of labor organization and wages and salaries performed an enormous task in revising the personnel allowance and the position pay scales.

One of the main problems in the initial period of working in the new way was that of coordinating the activity of all the PPK's. Why? Let us say that such a situation has developed in which there is no ship at one complex at a given moment and, consequently, no working front, while railroad cars are standing idle at a neighboring complex because there are not enough longshoremen. Who should coordinate the work of the two neighboring PPK's in such cases? In our opinion, the port's main dispatcher service. We created such a service, which had not existed previously. Today, 12 persons work in it.

The mechanization complex has consolidated all the cargo-transfer equipment--this is over 160 units of gantry cranes and automotive and electric loader trucks. The PPK's thereby have been spared the cares of maintaining the cargo-transfer equipment in proper technical condition.

The social services and operational support complex has assumed the cares of providing the longshoremen and equipment operators with special clothing, tools, cargo devices, and fastening materials. The collective of this complex also is responsible for maintaining the workers' dressing- and rest-room facilities and all grounds of the port in ideal condition.

For us, PPK-1 is the largest and the most complicated in the nature of its work and its management. About 500 persons work here, including 4 composite brigades [teams] of longshoremen and equipment operators. The complex has two warehouses assigned to it, and it primarily processes balances going into export, and import cargoes.

PPK-2 specializes in bulk cargoes, and processes over 1.8 million metric tons of cargoes annually.

PPK-3--this is the new Vysotsk Port Annex being opened up, our great hope. The point is that prospects for development and expansion have been practically exhausted at the Vyborg Port itself. Its grounds are hemmed in by Yuzhnyy Val [South Levee] Street, the Vyborg Shipbuilding Plant, and...Vyborg Bay. Vysotsk is another matter. The designed capacity of its first increment is 400,000 metric tons of cargoes annually. Only two docks [wharves, quays or piers] are available there right now (Two more are being built).

There have been no overt opponents of the new organization for managing the transshipment process--the districtless organization--in the Vyborg Maritime Port. At first, however, there were doubters. This, it is thought, is a natural phenomenon, especially since they very rapidly understood the progressiveness of the transition, and changed their opinions. As for problems that, in the future, will hinder increasing even more the volumes of cargo processing, and reducing even more the demurrages of maritime ships and railroad cars in freighting operations, there are some points of view here which, in my opinion, deserve attention.

The volume of cargo processing in the port had grown threefold in 1985 by comparison with 1970. Of course, this growth is taking place mainly because of the further mechanization of loading-unloading operations, the increase in labor productivity and professionalism of the longshoremen and equipment operators, the intensification of the transshipment process, and the strengthening of organizational activity and performance discipline. But even so, the port acutely feels a shortage in its personnel allowance of such specialists as mechanics, electricians, and shift-working deputy chiefs of warehouses.

A second problem--the extremely poor material and technical supplying of the port. This applies, in particular, to the provision of spare parts for imported equipment.

For 1985, having calculated our realistic requirements, we placed an order with the shipping company's material and technical support service for 150 storage batteries (this for ensuring normal operation of 160 cargo-transfer units, the port's motor transport, its own 3 locomotives, and 15 port fleet floating units; i.e., tugs, and pilot and work boats). Instead of the 150 storage batteries, we received just 38. That is, we shall be able to put no more than 0.2 storage battery each in every transport or cargo-transfer unit. Funny? It would be funny if we were not so sad because of it.

Fastening lumber is required when loading imported goods in railroad cars. In it is the key to timely and high-quality shipping of freight. And yet, for the fourth quarter of 1985, we were allocated funds for fastening lumber in the amount of...0.0 cubic meters.

1985 has ended, and with it the experiment in managing the transshipment process by the districtless organization. The experiment has ended, and permanent operation by the new management system has begun. Personally, I believe that there are great prospects and a long life for PPK's in maritime ports, and that their service in the name of intensifying the work of our country's maritime fleet is inevitable.

The transition to management of the transshipment process through PPK's--this is one of the main guarantors of future improvement in the utilization of both the ships of the maritime fleet and its ports.

You must not think we are saying here that we have worked for a year by the districtless organization and already have solved all the problems and achieved everything. We still must do much work to eradicate old work habits and methods.

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INTERSECTOR NETWORK DEVELOPMENT

KRAYKOM SECRETARY ON PRIMORYE REGIONAL TRANSPORT CONCERNS

Moscow VODNYI TRANSPORT in Russian 13 Feb 86 p 2

[Article by V. Chubay, secretary of the CPSU Maritime Kraykom: "A Time of Large Concerns"]

[Excerpts] As a result, the introduction of the transport processing system has permitted 20 medium tonnage vessels to be released for additional shipments. The speed, with which general cargo is handled, grew fivefold. The consignors and consignees have given a high evaluation to the advantages of the new transport system and are interested in expanding lighter shipments.

During the 11th Five-Year Plan, the Far Eastern Shipping Company fleet was replenished with new vessels of the multi-purpose Arctic Norilsk type. This has permitted a highly principled review of the technology for delivering goods to Arctic rayons to be made. As a result, reserve tonnage was again freed.

Particularly noticeable changes occurred during the years of the five-year plan in Vostochnyy Port which celebrated its 10th anniversary in April 1984. Today, five specialized complexes: coal, timber, chips and two container ones, operate on the shores of Vrangeli Bay. Compared with the 10th Five-Year Plan, the volume of freight processed here has increased almost 15-fold.

New capacities are being commissioned and the reconstruction of shops and modernization of equipment are continuing in the ship repair yards of the Far Eastern Shipping Company. Almost the entire Far Eastern Shipping Company and Primorye Shipping Company fleet is being repaired, work to build a small fleet is being carried out and the repair of vessels from the fishing industry and other departments is being done in Vladivostok, Sovetskaya Gavan, Nakhodka and Slavyanka. The erection of a "plant within a plant" is being completed at the Slavyanskiy Ship Repair Yard. A decision has been made to create a coordinating council for the regional Far East transport hub in order to coordinate the work of the transportation organizations of the various departments and to improve further national economic and foreign trade shipments in

the Far East. A. Ivanov, chief of the Far Eastern Railroad, was put in charge of it. The question of the transportation branch's readiness to deliver goods to our country's northern rayons was discussed during a council meeting in April of last year. All of the speakers primarily singled out cases of a lack of coordination in the actions of the region's transport workers. The critical comments lay at the basis of the council's decision. One cannot say that a radical improvement in the work of the transport enterprises occurred and that all failures to coordinate "suddenly" disappeared with the establishment of the new body. Of course not. The decision of the council, however, did permit many discrepancies to be overcome.

The CPSU kraykom has repeatedly examined questions about improving transport operations, raising effectiveness in using transport assets, expanding integrated socialist competition, and selecting, training and assigning command personnel. It has become a tradition in the kray to hold annual meetings of the party and economic aktiv and sign contracts for the integrated socialist competition of labor collectives in railroad, maritime and automotive transport and the fishing industry. Based on the initiative of the transportation and communication section of the CPSU kraykom's economic and social development council, the control figures of all transport enterprises were analyzed with a view to coordinating and tying together the five-year tasks. At the present time, the development of a complex program for container and packaged shipments is being completed in the kray for the 12th Five-Year Plan.

Unfortunately, however, it is not possible to resolve every question at the level of kray bodies or the regional transport coordinating council. The chronic failure to coordinate plans for the shipment of imported goods on maritime and railroad transport and the arrival and dispatch of export products from Maritime commercial seaports evoke serious concern. For example, the kray's railroad workers fulfilled the 1985 plan for shipping imports ahead of time; they even moved 100,000 tons of freight above the plan. At the same time, tens of thousands of tons of pipe, machinery and expensive equipment piled up in the seaports. They lay as dead cargo for months, expecting dispatch. The Ministry of Railways repeatedly gave instructions that the freight cars, which were unloaded in the ports, were to be loaded with imports.

How did it turn out in fact?

For example, the port of Nakhodka submits a requisition every day for 100 gondola cars. It is allotted 20-30, and 100-120 empty ones, which have been freed of lumber by the port, are surrendered to the account for regulating assignments. These freight cars are often sent to the very rayons where the pipes, material and equipment should be sent. Valuable products get wet and spoiled, but the scarce gondola cars deliver for thousands of kilometers... air!

Only a third of the gondola cars, which were unloaded in the ports, were loaded last year. The Ministry of Railways fulfilled the planning target for the feeding of freight cars for imports by 88 percent. Up to 20 vessels sat idle

in the roadstead during individual months because of the absence of empties. On the other hand, the failure to coordinate the operations of foreign trade organizations, the Ministry of Railways and the Ministry of the Maritime Fleet leads to the demurrage of a large number of freight cars with export goods. All of this lack of coordination leads to situations similar to that which took shape in the kray during September and October of last year. Tonnage for the export of coal "disappeared". More than 1,000 freight cars piled up on the railroad. The storage areas of Vostochnyy Port were already overflowing with coal which caught fire spontaneously because of the long storage time. A paradox? At the present time more than 300 freight cars with mineral fertilizer have been standing idle in the port of Nakhodka since the beginning of April.

It seems that the Ministry of Foreign Trade, the Ministry of Railways, and the Ministry of the Maritime Fleet must achieve clarity and mutual coordination in their work and not allow errors in planning. Blunders cost too dearly: A stream of telegrams is arriving in the party's kraykom with requests to help accelerate unloading or loading. Confusion gives birth to demurrage and material and moral losses. The directors of the Far Eastern Shipping Company have even turned to the USSR General Procurator and the country's People's Control Committee. The lack of coordination is the main reason.

Even harsher wording is applied to other cases. Interruptions in the operation of the Vostochnyy Port coal complex occur because of the massive fouling of the export coal with foreign objects. Conveyor belts are torn and mechanisms are broken. Every month, up to four tons (!) of various metal objects fall into the receiving bins of the freight car dumpers. During March of last year, a 127-meter long conveyor was cut by a metal plate, it was out of operation for three days. During the last two years alone, the coal complex has been halted 30 times and the idle time of the machinery was 700 hours. As a result, more than 6,000 freight cars were not unloaded. The Soyuzpromeksport All Union Association annually pays foreign firms tens of thousands of rubles for the extraction of objects, which are found in the unloading ports, from the coal. The state suffers colossal losses because of the callousness of individual workers. The Ministry of the Coal Industry and the Ministry of the Railways must take timely and stern measures to prevent the fouling of export products.

I will point out that the mentioned deficiencies and discrepancies, including those in planning and in the work of fellow transport workers in Primorye are being repeated from year to year. That is why I am not mistaken when I express the common opinion of dozens of the most competent specialists and directors-- it is necessary to establish a single body for managing the country's transportation branch in order to improve the coordination of the work of the different types of transportation. Only such a body would be capable of tying together loading and unloading plans at railroad stations and the processing of goods in seaports and the plans for all railroad, maritime, river and automotive transport operations with the help of a single automated system. It is time to eliminate the departmental open-field system.

The draft Basic Direction for the Economic and Social Development of the USSR During 1986-1990 and out to the Year 2000 once again emphasizes the need to

increase the efficiency with which fixed production capital is used. There exist reserves here whose incorporation could provide a significant economic effect. However, the processing volume here must grow further through the years, that is, they are planning a notorious period of idle time for the transport workers because the construction of the second phase of the coal complex has still not been begun.

The container carrier transport processing system will receive a great deal of expansion during the 12th Five-Year Plan. A great deal of assets will be expended on the construction of container terminals, lifting equipment, and the building of specialized container carrier vessels. The Ministry of Railways, however, is clearly allocating an insufficient amount of special flat-cars for container loading. Moreover, the time for delivering containers to border stations and to the western basins of the country is 35 days on the average. The delivery of containers by express trains takes 16 days and sometimes 11. However, drops from the sea of goods are sent by express trains. As a result, containers pile up in the ports, container carriers stand idle, and direct losses occur.

An important place in the transporting of passengers belongs to maritime transport in our region -- you will only get to several Far East settlements by motor vessel. During recent years, however, you will not get there at times. The average age of passenger vessels is 18 years, and the capacity of the fleet decreased by 1,392 places during the 11th Five-Year Plan. It is planned to write off another five ships during the 12th Five-Year Plan-- although we cannot now guarantee the movement of 15,000 people. The shortage of passenger tonnage is having an especially acute effect on the mass transportation of student detachments, worker organizational levies, replacement crews for fishing industry vessels in the fishing areas, and tourists. During the current five-year plan, the passenger carrying capacity will decrease another 790 places considering the writing off and replenishment of the fleet. The party kray committee and the kray ispolkom have repeatedly requested the Ministry of the Maritime Fleet to carefully examine the question of replenishing the passenger fleet in the Far East, but there is still no reply.

Ferries have proven themselves well in Primorye. We need them no less acutely than passenger vessels. Every summer, for example, thousands of the inhabitants of Kamchatka and Sakhalin travel on vacation to the mainland. If we had car ferries, the vacationers would eagerly bring their automobiles with them. During the kray party conference that was held, the communists broached the subject of ferry support for our island rayons. Ferry transportation is highly profitable in the kray.

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